

BOYNTON & PLUMMER

WORCESTER, MASSACHUSETTS, U. S. A.



Shaping Machines
Drilling Machines

Bolt Cutting Machines
Portable Forges, Etc.

Cable Address: "BOYNTON, WORCESTER"

Codes used:

Lieber's, Western Union, Manufacturers' Export



VANDYCK CHURCHILL COMPANY

MACHINE TOOLS AND EQUIPMENT

8 DEY STREET

WESTERN UNION BUILDING

NEW YORK

CATALOGUE and PRICE-LIST
No. 2
OF
IMPROVED SHAPING MACHINES
UPRIGHT, HAND AND POWER DRILLS

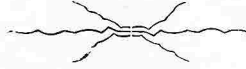
Overhead Drills, Horizontal Drills, Breast Drills,
Swivel Clamp Drills, Railroad Track Drills,
Bolt Cutting and Nut Tapping Machines,
Portable Forges, Tire Benders, Tire Shrinkers,
Bolt Headers, Etc., Etc.



MANUFACTURED BY
BOYNTON & PLUMMER,

Office and Works, 52 Lagrange St.,
WORCESTER, MASS., U. S. A.

1903.



OUR TERMS



Are cash in thirty days from date of invoice unless otherwise specified.

We deliver machines free on board cars at Worcester, in good shipping order.

Extra crating or boxing will be charged for at cost of material and labor.



INTRODUCTION.



We take pleasure in offering to our customers our new illustrated catalogue, No. 2, of machinery manufactured by us. It is intended to take the place of all others heretofore issued, and we believe illustrates and describes the most complete list yet presented of desirable machines manufactured for the use of blacksmiths, carriage makers, repair and machine shops. We call special attention to the many improvements which have been made since our last issue, and we shall continue to add such improvements as seem desirable to keep the high standard of excellent workmanship, convenience and durability of our machinery.

We could, if necessary, fill a large volume with references from the thousands using our tools throughout this and foreign countries. Instead of which we guarantee our tools to do all for which we recommend them. All machines of our manufacture are offered to the mechanical public as standard of their class.

We also wish to call special attention to our illustrated list of duplicate parts for repairs to our machines, whereby they may be ordered by name or number, which will be found a great saving to our customers of express and freight charges in returning old parts to be duplicated; and last, but not least, our telegraphic code, for the convenience of our customers abroad.

During our many years of business as manufacturers it has been our constant aim to furnish only tools of standard excellence. This will still be our policy, and we respectfully solicit a continuance of the patronage with which we have been favored.

Respectfully,

BOYNTON & PLUMMER.

Worcester, Mass., U. S. A.

TO OUR CUSTOMERS ABROAD.

We wish to announce that we have added to this our new catalogue a complete telegraphic code, for the convenience of our foreign customers, by which any machine or part may be ordered by the use of one word, thereby saving much expense in cost of cablegrams.

Special attention is always paid to the boxing of export shipments, being careful to pack machines in the least possible space and to put them in as few packages as possible. We are always pleased to include small parcels, ordered from other firms, without extra cost. Any duplicate or repair part may be also included. We have given the dimensions of each machine boxed for export, and the shipping weight, but the same is greatly reduced, as well as the cost of boxing, when two or more machines are packed together. Appreciating the inconvenience to which foreign buyers are put in ordering and obtaining American goods, we have spared neither pains nor expense in making this catalogue as complete as possible and to add to the convenience of our customers abroad.

BOYNTON & PLUMMER,

Worcester, Mass., U. S. A.

Cable address: Boynton, Worcester.

Codes used: Lieber's, Western Union, Manufacturers' Export.

IMPROVED SHAPING MACHINES.



The Shaping Machines illustrated on following pages represent our improved machines; the capacity of each having been increased 50 per cent. or more. They will be found complete in all their appointments, made of the best material, and highest class of workmanship. The driving shafts and feed screws are of the best of steel. The screws and other parts, where necessary, are case hardened. The feed is automatic and reversible. The cutter-bar has a graduated swivel-head.

A large open space through body of machine directly under tool permits the placing of long work, such as shafts for key-setting, etc.

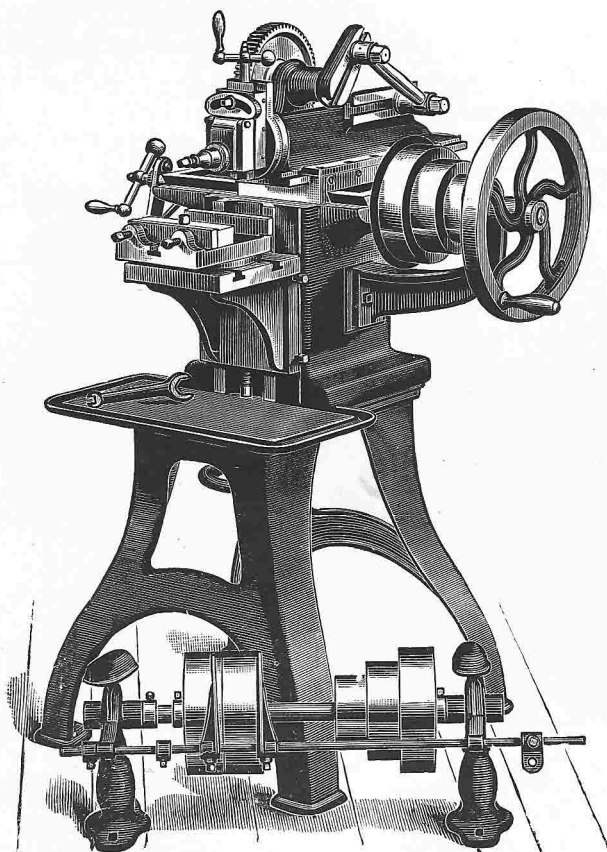
The table is adjusted by means of a screw and wheel under table on the six and eight inch, and by a crank at the side on the ten inch. They will take a stroke to their full capacity, and can easily be adjusted to any less distance required.

A swivel chuck is furnished with each machine—also a plain chuck—taking work full length of traverse when wanted.

These machines will do accurate work, and are a desirable tool for model makers, die sinkers, railroad, repair, and other shops where there is much short work to be done by filing or planing, thus saving the expense and room of a large planer, besides the large saving in files and labor required on such work.

They are guaranteed to do all that is represented, and for many purposes are preferable to higher-cost machines.

Duplicate parts of all machines furnished at short notice.

6x9-INCH TRAVERSE HEAD SHAPER.

For dimensions see opposite page.

DIMENSIONS, ETC.

Length of stroke, 6 inches.

Length of traverse, 9 inches.

Greatest distance between tool and table, 8 inches.

Driving pulleys on counter-shaft, 6 inches, for $2\frac{1}{2}$ -inch belt.

Cone pulleys, 3 steps, 3, $4\frac{1}{2}$, 6 inches, for $1\frac{3}{4}$ -inch belt.

Counter-shaft, revolutions per minute, 220.

Size of swivel chuck, 7 inches long, $4\frac{1}{4}$ inches between jaws,
 $1\frac{1}{4}$ inches deep.

Weight, 450 pounds.

Boxed for export, 49x28x29 inches, 600 pounds.

Floor space required, 25x25 inches.

Telegraphic Code.

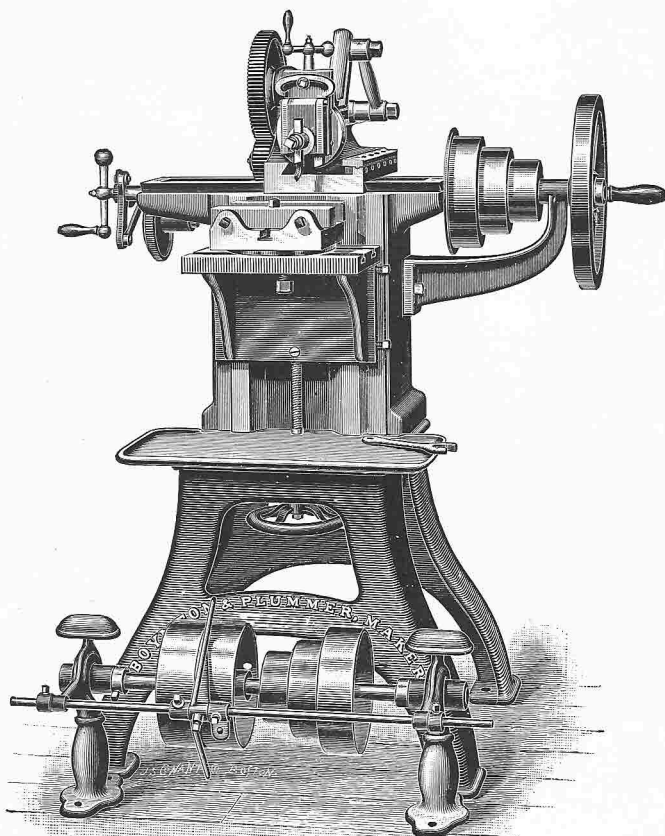
Price.

Traidores.	With swivel chuck complete, as shown in cut,	\$135.00
Traillaron.	Hand machine, without cone and coun- ter-shaft,	120.00
Traiments.	Hand machine for bench, without plate and legs,	110.00
Traigau.	Plain chuck, 9 inches long, extra,	9.00

SPECIAL.

Traimois.	Above machine, with counter-shaft and swivel chuck, with length of traverse 14 inches, including plain chuck 14 inches long,	\$160.00
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8x12-INCH TRAVERSE HEAD SHAPER.



For dimensions, etc., see opposite page.

DIMENSIONS, ETC.

Length of stroke, 8 inches.

Length of traverse, 12 inches.

Greatest distance between tool and table, 10 inches.

Driving pulleys on counter-shaft, 8 inches, for $2\frac{1}{2}$ -inch belt.

Cone pulley, 3 step, $4\frac{3}{4}$, $6\frac{3}{8}$, 8 inches, for 2-inch belt.

Counter-shaft, revolutions per minute, 100.

Size of swivel chuck, 8 inches long, $5\frac{1}{2}$ inches between jaws, $1\frac{1}{4}$ inches deep.

Weight, 750 pounds.

Boxed for export, $51\frac{1}{2} \times 28\frac{1}{2} \times 31\frac{1}{2}$ inches, 925 pounds.

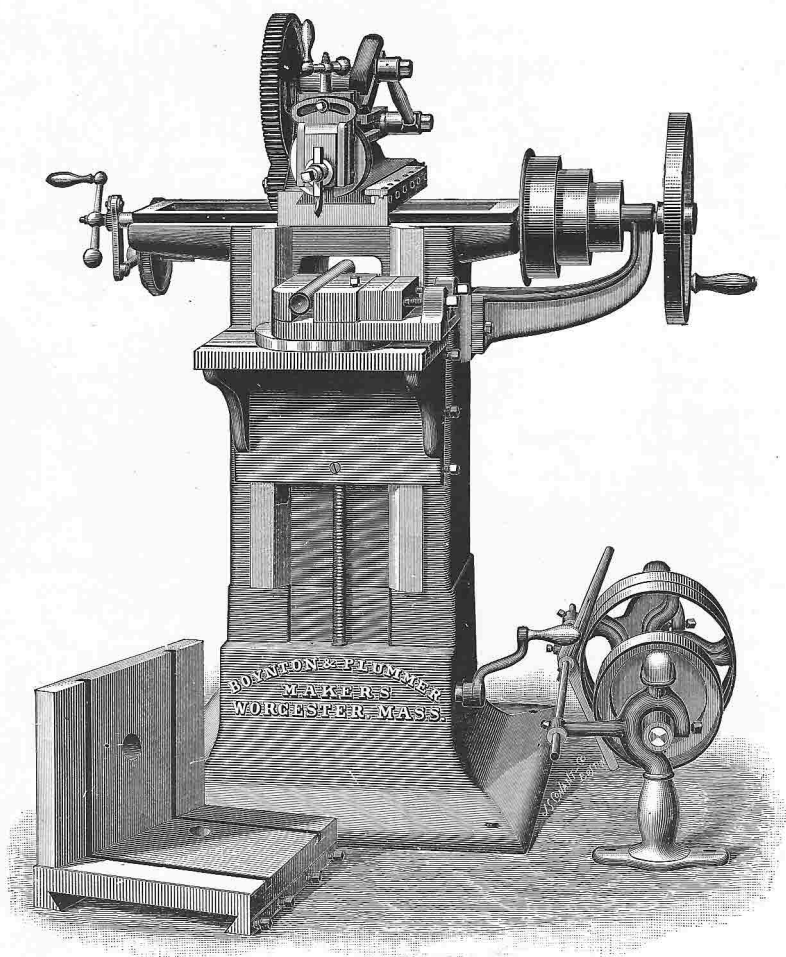
Floor space required, 27×27 inches.

Telegraphic Code.

Price.

Traiero.	With swivel chuck complete, as shown in cut,	\$200.00
Trail.	Hand machine, without cone and coun- ter-shaft,	184.00
Traillor.	Hand machine for bench, without legs and plate,	172.00
Trailladas.	Plain chuck, 12 inches long, extra,	12.00

10X15-INCH TRAVERSE HEAD SHAPER.



For dimensions, etc., see opposite page.

DIMENSIONS, ETC.

The 10-inch machine, being on a pedestal, admits the placing of long work in front of the machine, for which there is provided a face plate, for attaching such work as legs of machines, etc., and to which also may be attached any angle plate, either in a right or left hand position. The swivel chuck may be fastened to either the face plate or angle plate.

Length of stroke, 10 inches.

Length of traverse, 15 inches.

Greatest distance between tool and table, 18 inches.

Distance under tool, after removing table, for long work, 36 inches.

Driving pulleys on counter-shaft, 10 inches, for $2\frac{1}{2}$ -inch belt.

Cone pulley, 3 step, $4\frac{3}{4}$, $6\frac{5}{8}$, 8 inches, for 2-inch belt.

Counter-shaft, revolutions per minute, 100.

Size of swivel chuck, $9\frac{1}{2}$ inches long, 6 inches between jaws, $1\frac{1}{2}$ inches deep.

Weight, 1000 pounds.

Boxed for export, 52x35x33 inches, 1200 pounds.

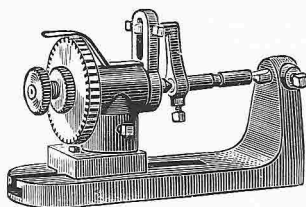
Floor space required, $25\frac{1}{2}$ x27 inches.

Telegraphic Code.

Price.

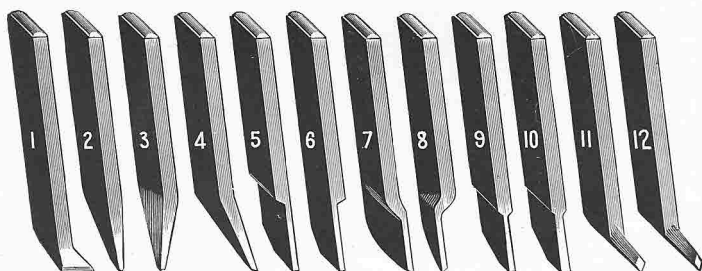
Traiezione.	With swivel chuck complete,	\$250.00
Train.	Front face-plate, extra,	16.00
Trainage.	Angle-plate, as shown in cut, extra,	30.00
Traillamos.	Plain chuck, 15 inches long, extra,	15.00

SHAPER CENTRES.



The above cut represents a pair of shaper centres to go with shaper when wanted, which will be found very useful in fluting reamers, taps, etc.

	No. 1.	No. 2.
Distance between centres, -	9 inches.	12 inches.
Diameter of swing, - - -	6 inches.	10 inches.
Weight, - - - - -	20 pounds.	35 pounds.
Price, - - - - -	\$12.00.	\$18.00.
Telegraphic code, - - -	Trancheur.	Tranchoirs.



Shaper tools, made of the best of steel, furnished when ordered.

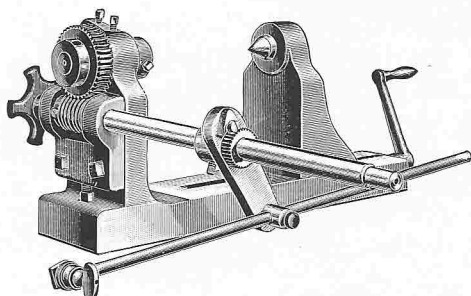
Telegraphic Code.

Tramutanza. For 6-inch shaper, $\frac{3}{8} \times \frac{3}{4}$,
 Tramutasse. For 8-inch shaper, $\frac{1}{2} \times 1$,
 Tramutata. For 10-inch shaper, $\frac{1}{2} \times 1$,

Price.

30 cents each.
 50 cents each.
 50 cents each.

CIRCULAR ATTACHMENT.



The above cut represents our new circular planing attachment, by the use of which circular or cylindrical work may be planed accurately. It has worm feed, operated by ratchet lever, with which a variety of feeds may be obtained.

Distance between centres, 12 inches.

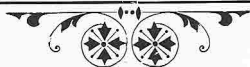
Diameter of swing, 12 inches.

Weight, 70 pounds.

Price, \$26.00.

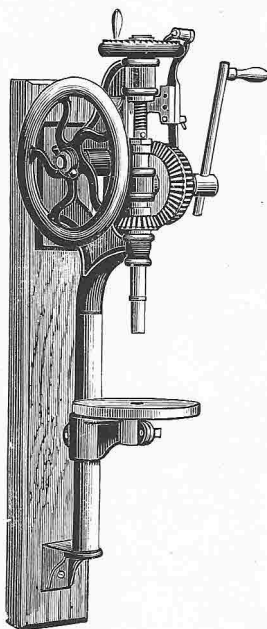
Telegraphic code, Trancholer.

DRILLING MACHINES.



In our long experience in the manufacture, sale and use of these tools, we have learned that it is not the cheapest machines that sell the best, much less give the best satisfaction. We have, therefore, been particular that all material and workmanship used in their construction should be of the best class. They have all the latest improvements adapted to such tools. In view of this the prices at which we are placing our tools on the market are as low as any machine their equal in these respects. They are considered by the trade and users of such machines as STANDARD in their line. All parts for repairs can be duplicated on receipt of orders. To obviate the necessity and expense of returning old parts to be duplicated, we have spared neither pains nor expense in illustrating and describing, in detail, all parts of our drilling machines, which may be ordered by name, number, or telegraphic code. Particular attention is paid to boxing these machines for export shipment, packing as many in each box as is practicable, thereby saving the purchaser much expense in boxing and shipping.

No. 0. UPRIGHT SELF-FEEDING DRILL.



Patented Aug. 16, 1892.

This size is intended for small, accurate work, and is a desirable tool for amateurs, electrotypers, and experimenters. The gearing is turned, finished and accurately cut. Spindle bored to receive $\frac{1}{4}$ -inch straight shank drills, and turned tapering on end to receive small chuck for wire drills. Has three grades of feed; has our patent automatic stop on feed, which prevents breaking of feed connection. Tight and loose pulleys, or 3-step cone pulley, for power are added to balance-wheel shaft, when so ordered. Drills 0 to $\frac{3}{8}$ -inch hole.

Length, 26 inches.

Weight, 30 pounds.

Boxed for export, 32x12x10 inches, 60 pounds.

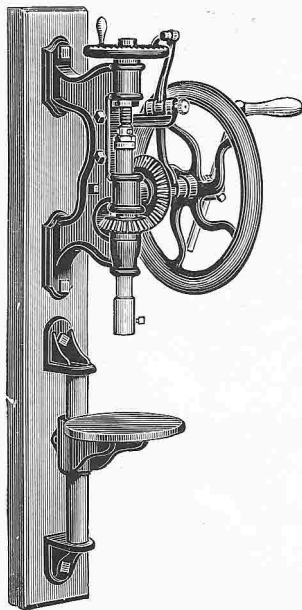
Telegraphic Code.

Traitement.	Hand machine, as per cut,
Traitmento.	With tight and loose pulleys,
Traitmentor.	With 3-step cone and counter-shaft,

Price.

\$20.00
23.00
35.00

No. 1. UPRIGHT SELF-FEEDING DRILL.



Patented Aug. 16, 1892.

Spindle takes $\frac{1}{2}$ -inch straight shank drills, or 41-64-inch if desired, and can be made to take taper or square shank at small advance in cost. Has three changes of automatic self-feed, instantly adjusted from fine to coarse, has our patent automatic stop on feed, which prevents breaking of feed connection. Drills 0 to 1-inch hole.

Length, 42 inches.

Weight, 100 pounds.

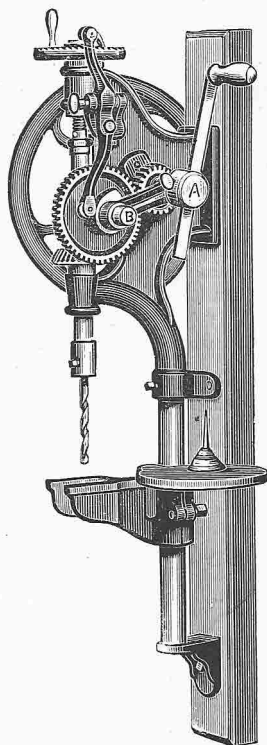
Boxed for export, 47x21x15 inches, 160 pounds.

Telegraphic Code.

Price.

Traiteurs.	Hand machine, as per cut,	\$28.00
Trajet.	With tight and loose pulleys, 7x2 inches, for power,	31.00
Trajeter.	With 3-step cone and counter-shaft,	53.00

No. 1 1-2. UPRIGHT SELF-FEEDING DRILL.



Patented Aug. 16, 1892.

This machine, as also all others of our self-feeding drills, has nearly a continuous feed, which may be quickly adjusted by a thumb-screw to three rates of speed. A fast or slow motion may be given the drill by changing the handle from shaft (A) to shaft (B) as desired by the operator. By this arrangement the capacity of the drill has been increased nearly one-third; has our patent automatic stop on feed, which prevents breaking of feed connection. Drills 0 to 1¼-inch hole, and to centre of 11-inch circle. Spindle takes ½-inch straight shank drills, or 41-64-inch if desired, and can be made to take taper or square shank at small advance in cost.

Length, 44 inches.

Weight, 120 pounds.

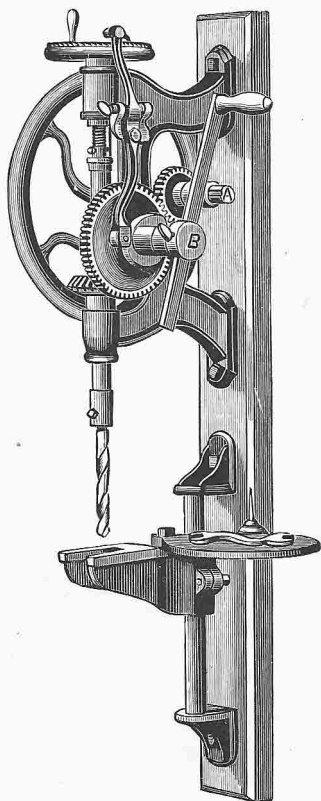
Boxed for export, 47½x17½x11½ inches, 170 pounds.

Telegraphic Code.

Price.

Traitorred.	Hand machine, as shown in cut,	\$34.00
Trajetours.	With tight and loose pulleys, 7x2 inches, for power,	37.00
Trakieren.	With 3-step cone and counter-shaft,	59.00
Emery-wheel grinders and wheel-holders furnished for our drills having balance wheel on side when desired.		

No. 2. UPRIGHT SELF-FEEDING DRILL.



Patented Aug. 16, 1892.

The swing table, as applied to these machines, will be found useful in many ways, and much more convenient than the old method of driving them in and out with a hammer, thereby running the risk of breaking the foot-piece. It is out of the way when not in use, and may be quickly swung into position when wanted.

This machine, as also the No. 1½, is particularly adapted for power by attaching tight and loose pulleys, or cone pulley, to shaft (A) outside of balance wheel. See illustration of No. 7 drill. Spindle takes ½-inch straight shank drills, or 41-64-inch if desired, and can be made to take square or taper shank at small advance in cost. Has our patent automatic stop on feed, which prevents breaking of feed connection. Drills 0 to 1½-inch hole, and to centre of 15-inch circle.

Length, 54 inches.

Weight, 160 pounds.

Boxed for export, 56x20½x13 inches, 240 pounds.

Telegraphic Code.

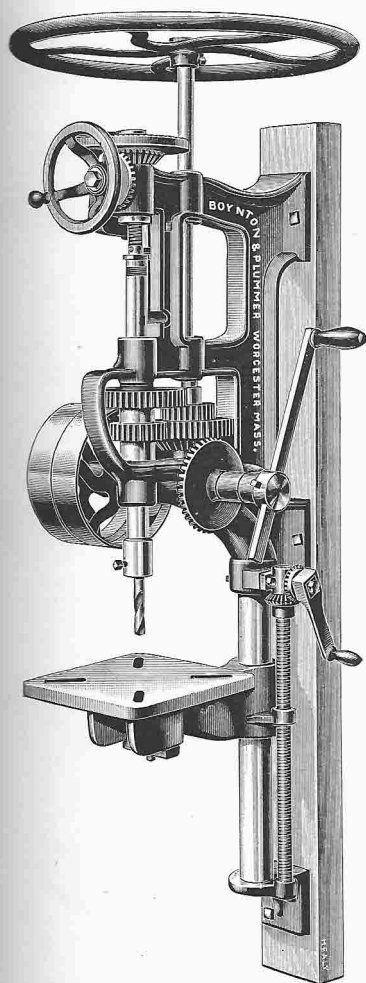
Traitoring. Hand machine, as shown in cut,
 Trajetry. With tight and loose pulleys, 8x2¼ inches,
 Tralascia. With 3-step cone and counter-shaft,

Price.

\$48.00

52.00

73.00



No. 3. IMPROVED UPRIGHT SELF-FEEDING DRILL.

Patented Aug. 16, 1892.

No. 3 has cut gears so arranged that a quick or slow motion may be given the drill, for light and heavy work, making a desirable tool for machine shop or factory, answering as well as higher-cost machines. Spindle takes 41-64-inch straight shank drills, or $\frac{1}{2}$ -inch if desired, and can be made to take square or taper shank at small advance in cost. Has our patent automatic stop on feed, which prevents breaking of feed connection. When used with 3-step cone pulley has six changes of speed. It has mechanical device for raising and lowering table. Also wheel on front of machine for hand feed and quick return. Hand machine can be converted into power at any time by the addition of pulleys. Drills 0 to $1\frac{1}{2}$ -inch hole, and

to centre of 21-inch circle. Speed of pulley for ordinary work, about 180 turns per minute.

Length, 69 inches.

Weight, 325 pounds.

Boxed for export, $71 \times 27\frac{1}{2} \times 14$ inches, 425 pounds.

Telegraphic Code.

Traitorly. Hand machine, without pulleys,
Traijimos. With tight and loose pulleys, $10 \times 2\frac{1}{2}$ inches, for
power,
Tralatizio. With 3-step cone and counter-shaft,

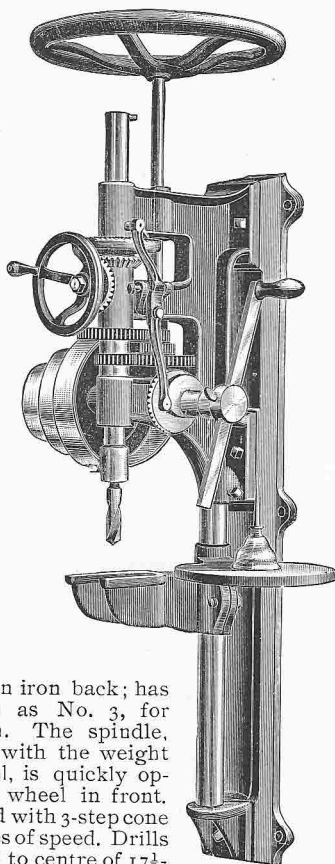
Price.

\$75.00

79.00

105.00

No. 4. UPRIGHT SELF-FEEDING DRILL.



No. 4 is mounted on iron back; has cut gears, arranged as No. 3, for fast or slow motion. The spindle, not being burdened with the weight of the balance wheel, is quickly operated by the hand wheel in front. Like No. 3, when used with 3-step cone pulley, has six changes of speed. Drills 0 to $1\frac{1}{2}$ -inch hole, and to centre of $17\frac{1}{2}$ -inch circle. Spindle takes 41-64-inch straight shank drills, or $\frac{1}{2}$ -inch if desired, and can be made to take square or taper shank at small advance in cost. Hand machine can be converted into power at any time by the addition of pulleys. Speed of pulley for ordinary work, about 170 turns per minute. Size of driving pulley, 10 inches, for $2\frac{1}{2}$ -inch belt; cone pulley, 10, 8, and 6 inches, for $2\frac{1}{4}$ -inch belt.

Length, 57 inches.

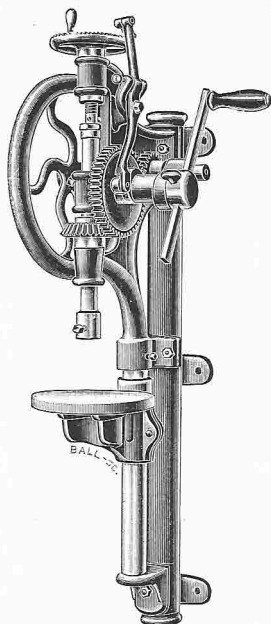
Weight, 250 pounds.

Boxed for export, $60 \times 22\frac{1}{2} \times 13$ inches, 325 pounds.

Telegraphic Code.

	Price.
Traitres. Hand machine, without pulleys,	\$70.00
Trajinadas. With tight and loose pulleys, $10 \times 2\frac{1}{2}$ inches, for power,	74.00
Tralatos. With 3-step cone and counter-shaft,	100.00

No. 5. UPRIGHT SELF-FEEDING DRILL.



Patented March 13, 1883, and Aug. 16, 1892.

The above drill has our patent tubular iron column, by the use of which it is more easily bolted in position to post or wall than those having a wood back, and is much more rigid. Otherwise, it is the same as our No. 1 $\frac{1}{2}$. Spindle takes $\frac{1}{2}$ -inch straight shank drills, or 41-64-inch if desired, and can be made to take taper or square shank at small advance in cost.

Length, 46 inches.

Weight, 135 pounds.

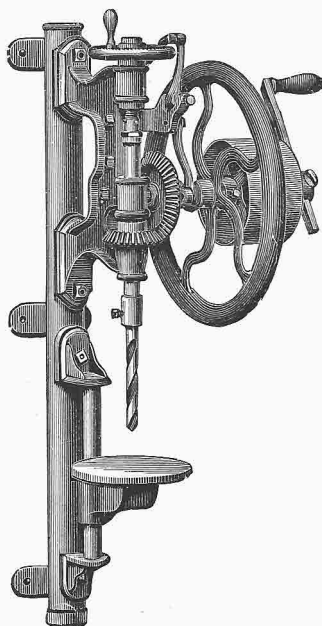
Boxed for export, 46x19x11 inches, 190 pounds.

Telegraphic Code.

Price.

Traitreux.	Hand machine, as shown in cut,	\$36.00
Trajinado.	With tight and loose pulleys, 7x2 inches,	39.00
Trajinador.	With 3-step cone and counter-shaft,	61.00

No. 6. UPRIGHT SELF-FEEDING DRILL.



Patented March 13, 1883, and Aug. 16, 1892.

The above drill has our patent tubular iron column. Otherwise it is the same as our No. 1. Drill from 0 to 1-inch hole, and to centre of 11-inch circle. Spindle takes $\frac{1}{2}$ -inch straight shank drills, or $\frac{1}{4}$ -64-inch if desired, and can be made to take taper or square shank at small advance in cost.

Length, 42 inches.

Weight, 125 pounds.

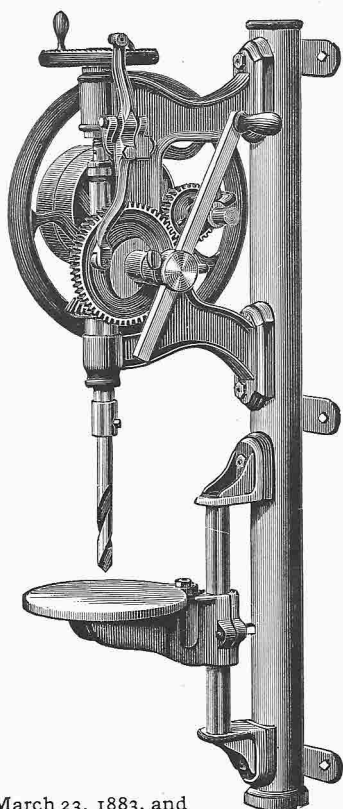
Boxed for export, 47x15x21 inches, 170 pounds.

Telegraphic Code.

Traitrise.	Hand machine without pulleys,	\$30.00
Trajinamos.	With tight and loose pulleys, 7x2 inches,	33.00
Trajinamora.	With 3-step cone and counter-shaft,	55.00

Price.

No. 7. UPRIGHT SELF-FEEDING DRILL.



Patented March 23, 1883, and

Aug. 16, 1892.

The drill here shown has a tubular iron column, otherwise it is the same as our No. 2 drill, and is especially recommended for use in factories, agricultural works, machine shops, or other places where an upright drill is required, answering the purpose equally as well as the high-cost machine. Spindle is fitted for $\frac{1}{2}$ -inch straight shank drills, or $\frac{1}{4}$ - $\frac{3}{4}$ -inch if desired, and can be made to take taper or square shank at small advance in cost. Drills from 0 to $1\frac{1}{2}$ -inch hole, and to centre of 15-inch circle.

Length, 54 inches.

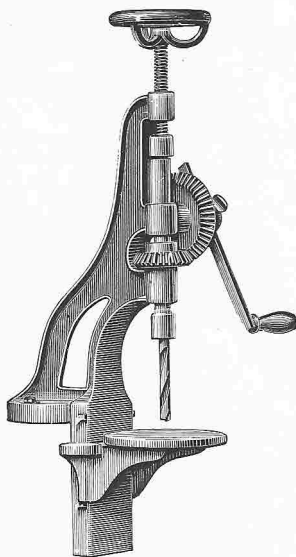
Weight, 200 pounds.

Boxed for export, 54x23x13 inches, 285 pounds.

Telegraphic Code.

		Price.
Trajanos.	Hand machine, without pulleys,	\$52.00
Trajinante.	With tight and loose pulleys, 8x2 $\frac{1}{2}$ inches, for hand and power,	56.00
Trajinantor.	With 3-step cone and counter-shaft,	77.00

No. 8. UPRIGHT BENCH DRILL.



Drills 0 to $\frac{3}{4}$ -inch hole, and to centre of 10-inch circle. Spindle fitted for $\frac{1}{2}$ -inch straight shank drills, or 41-64-inch, if desired.

Length, 33 inches.

Weight, 55 pounds.

Boxed for export, 31 $\frac{1}{2}$ x15x10 inches, 85 pounds.

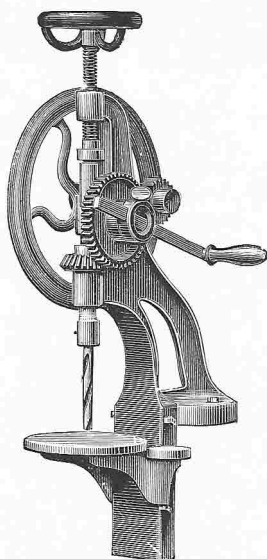
Telegraphic Code.

Trajar.

Price.

\$12.00

No. 9. UPRIGHT BENCH DRILL.



Drills 0 to 1-inch hole, and to centre of 10-inch circle. Spindle fitted for $\frac{1}{2}$ -inch straight shank drills, or $\frac{1}{4}$ -64-inch, if desired.

Length, 33 inches.

Weight, 75 pounds.

Boxed for export, 34x19x11 inches, 115 pounds.

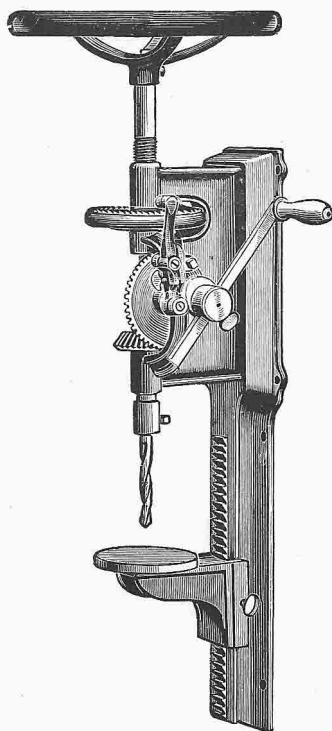
Telegraphic Code.

Trajeabais.

Price.

\$15.00

No. 10. UPRIGHT SELF-FEEDING DRILL.



The frame is iron, cast in one piece. It is strong, very light running, and easily handled. The feed has a run of 4 inches, and three rates of speed. Can be used as a horizontal drill if desired. Drills 0 to $\frac{3}{8}$ -inch hole, and to centre of 11-inch circle. Spindle is fitted for $\frac{1}{2}$ -inch straight shank drills, or 41-64-inch if desired.

Length, 44 inches.

Weight, 100 pounds.

Boxed for export, $26\frac{1}{2} \times 18\frac{1}{2} \times 11\frac{1}{2}$ inches, 150 pounds.

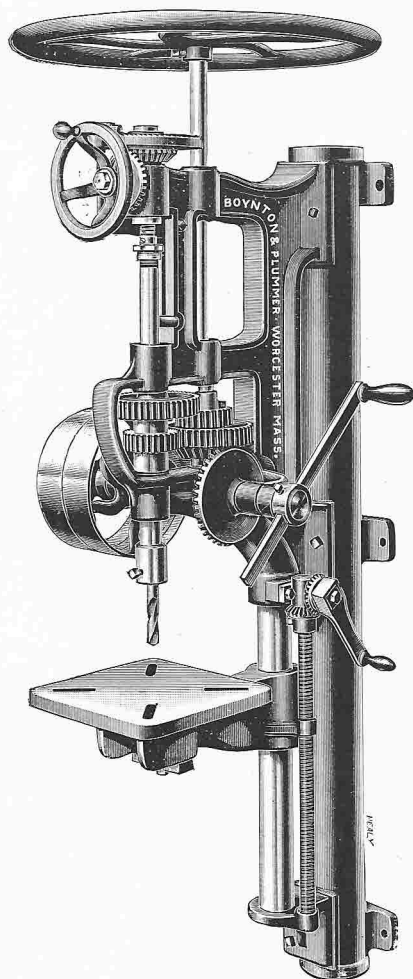
Telegraphic Code.

Trajeadas.

Price.

\$25.00

No. II. IMPROVED UPRIGHT SELF-FEEDING DRILL.



Patented March 13, 1883, and Aug. 16, 1892.

This machine is the same as our No. 3, but is fastened to our patent tubular iron column instead of a wood plank; and is more readily placed in position on post or wall, and is very rigid in position.

Length, 69 inches.

Weight, 355 pounds.

Boxed for export, 69x29½x12 inches, 445 pounds.

Telegraphic Code.

Trajeado. Hand machine, without pulleys,
 Trajinaria. With tight and loose pulleys, 10x2½ inches,
 Trajinarior. With 3-step cone and counter-shaft,

Price.

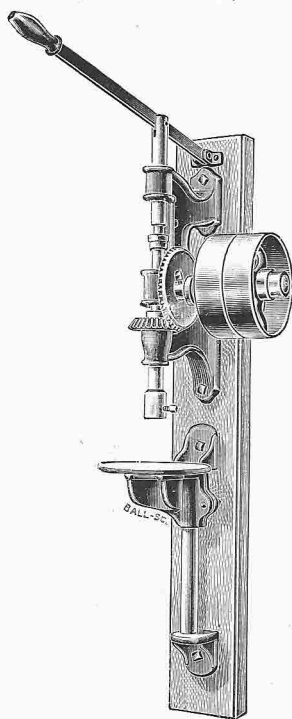
\$80.00

84.00

110.00

No. 12. UPRIGHT POWER DRILL.

(Lever Feed.)



The above drill is arranged for power with lever feed. A very useful tool for quick and light drilling—for carriage and other shops—and is also a very desirable tool for drilling hard wood. Drills from 0 to 1-inch hole, and to centre of 11-inch circle. Spindle is fitted for $\frac{1}{2}$ -inch straight shank drills, or 41-64-inch if desired, and can be made to take taper or square shank at small advance in cost.

Length, 43 inches.

Weight, 75 pounds.

Boxed for export, 46x15x8 inches, 125 pounds.

Telegraphic Code.

Price.

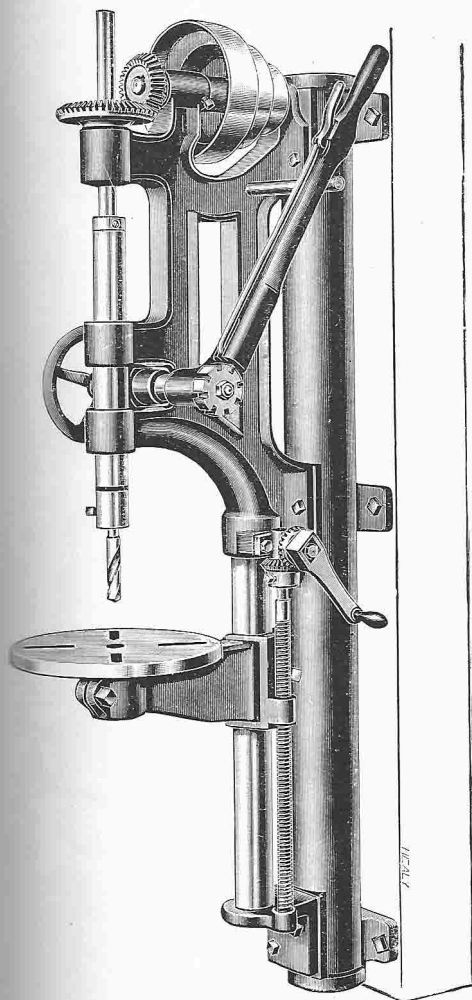
Trainard. With tight and loose pulleys, 7x2 inches,
as shown in cut,

\$28.00

Trainardor. With 3-step cone and counter-shaft,

53.00

No. 13. IMPROVED UPRIGHT POWER DRILL. (Lever Feed.)



Patented March 13, 1883.

The above represents a power drill, with lever feed, fastened to tubular iron column. It is a very suitable machine for blacksmith and other shops where power is used. It is furnished with a square table and forked foot-piece, as shown in cut of our No. 3 drill, or with round table and foot-piece, as shown in above cut, as desired. Drills to the centre of 19-inch circle. Greatest distance between table and spindle, 21 inches; traverse of spindle, 8 inches. Spindle is fitted for 41-64-inch straight shank drills, or $\frac{1}{2}$ -inch if desired and

can be made to take taper or square shank at small advance in cost. It has mechanical device for raising and lowering table. Three-step cone pulley, $8\frac{1}{2}$, $6\frac{1}{2}$, $4\frac{1}{2}$ inches, for $2\frac{1}{4}$ -inch belt. Tight and loose pulleys on counter-shaft, 10 inches, for $2\frac{1}{2}$ -inch belt.

Length, 63 inches.

Weight, 330 pounds.

Boxed for export, $64\frac{1}{2} \times 28 \times 15$ inches, 420 pounds.

Telegraphic Code.

Price.

Traineau. Complete with counter-shaft,

\$80.00

No. 14. IMPROVED UPRIGHT POWER DRILL.
(Lever and Screw Feed, 24-Inch Swing.)

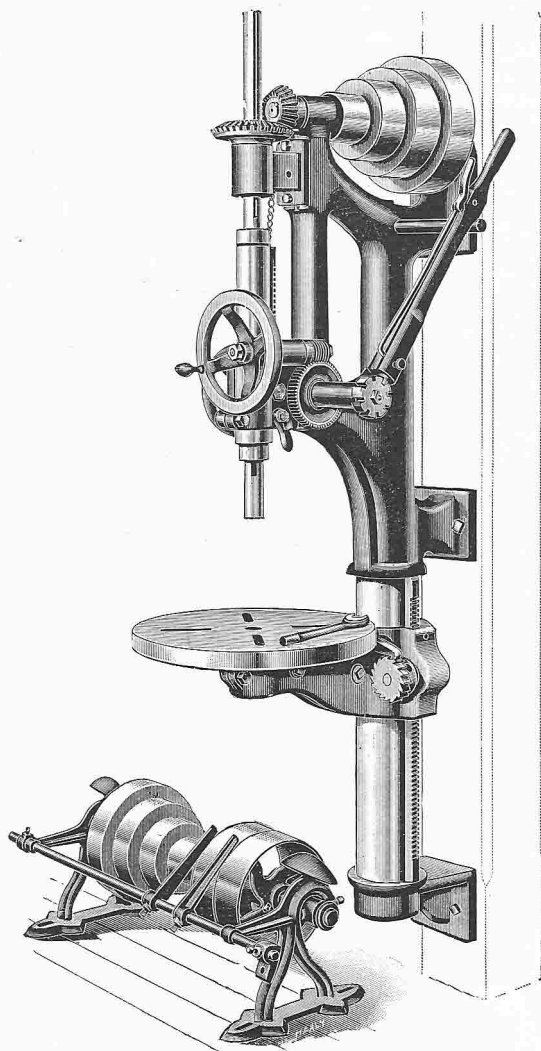


Fig. 1.

For description of above drill see opposite page.

DESCRIPTION OF IMPROVED No. 14 DRILL.

The machine represented by Fig. 1 is adapted to the wants of machine and other shops desiring a first-class drill of large capacity, so constructed as to require the least possible space for its occupancy. It has strong and heavy brackets, and, when bolted to post or wall, is very rigid in position. It is made with screw and lever feed, combined or singly.

It is fitted with 4-step cone pulley of large dimensions for 2 $\frac{3}{4}$ -inch belt, which will give a good variety of speeds. It has a very large revolving table, properly slotted for bolting work to same.

The hole in steel spindle (which is counterbalanced) is fitted for Morse taper No. 3, although sockets for taking chucks, square or straight shank drills are furnished at small advance in cost when desired.

Distance from post to centre of table, 12 inches. Diameter of table, 20 inches. Greatest distance between table and spindle, 24 inches. Vertical traverse of spindle, 11 inches. Diameter of cone pulley, 11, 8 $\frac{3}{4}$, 6 $\frac{1}{4}$ and 4 inches, for 2 $\frac{3}{4}$ -inch belt. Diameter of tight and loose pulleys on counter-shaft, 10 inches for 3-inch belt. Revolutions per minute, 230. Entire length of drill, 72 inches.

Weight, 610 pounds.

Boxed for export, 74x34x22 inches, 735 pounds.

Telegraphic Code.

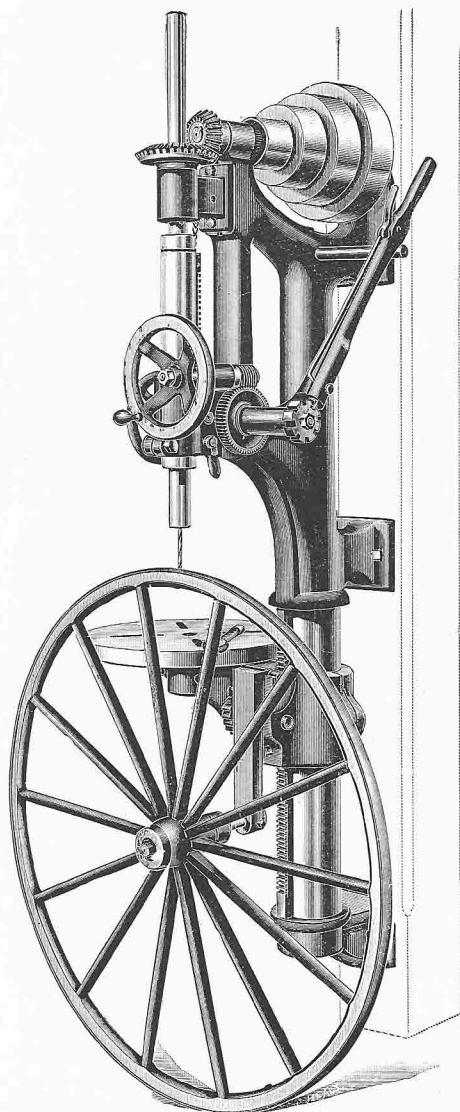
Price.

Trainelle.	With counter-shaft and lever feed,	\$125.00
Traineur.	With counter-shaft and screw feed,	130.00
Trainoirs.	With counter-shaft, lever and screw feed combined,	135.00

Add 2 to code word for wheel-holding attachment (see next page).

No. 14. IMPROVED UPRIGHT POWER DRILL.

Fig. 2.



The above represents our No. 14 drill for blacksmiths and carriage-makers, being fitted with a removable wheel-holding attachment, on which wheels are quickly revolved when drilling holes in tires. Wheels of various dimensions can be brought in contact with drill bit by raising or lowering the table arm to which the wheel-holder

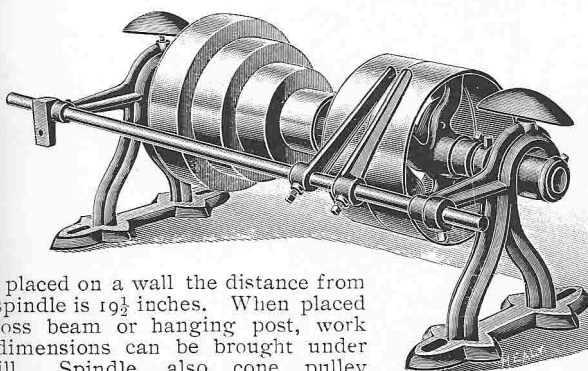
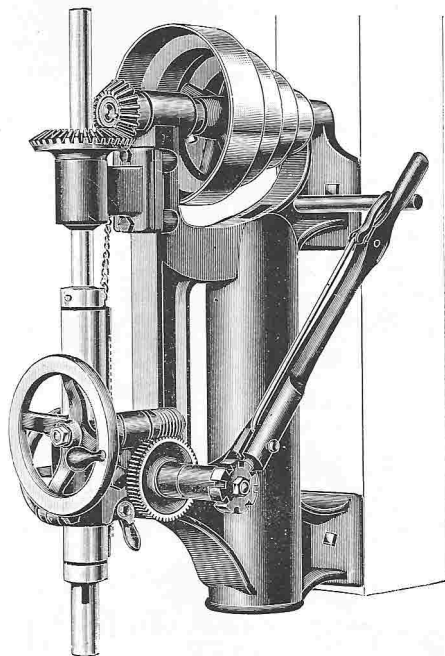
is attached. In all other respects it is the same as drill represented by Fig. 1.

Price of wheel-holding attachment, \$5.00.

Telegraphic code, Troinons.

No. 15. IMPROVED OVERHEAD OR HANGING DRILL.

(Lever and Screw Feed.)



When placed on a wall the distance from wall to spindle is $10\frac{1}{2}$ inches. When placed on a cross beam or hanging post, work of any dimensions can be brought under the drill. Spindle, also cone pulley on drill and counter-shaft, same as No. 14 drill. Entire length of drill, 36 inches.

Weight, 400 pounds.

Boxed for export, 38x30x18 inches, 475 pounds.

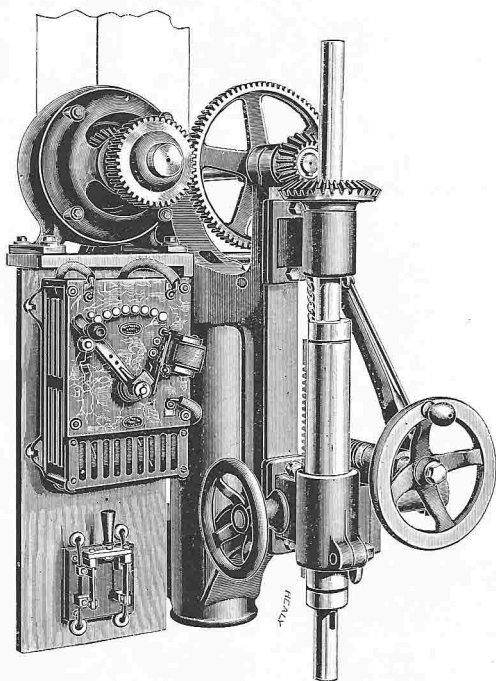
Telegraphic Code.

Tralciaia.	With counter-shaft and lever feed,	\$95.00
Tralciosa.	With counter-shaft and screw feed,	100.00
Tralhar.	With counter-shaft, lever and screw feed combined,	105.00

Price.

No. 15. OVERHEAD OR HANGING DRILL.

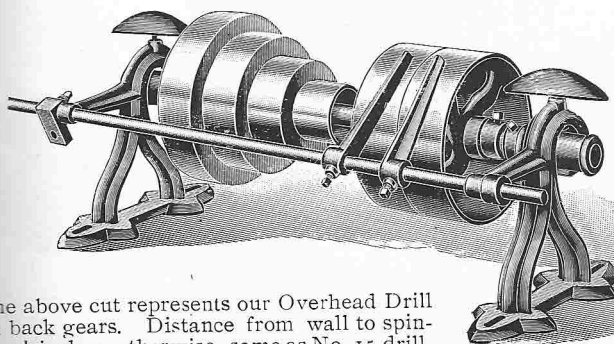
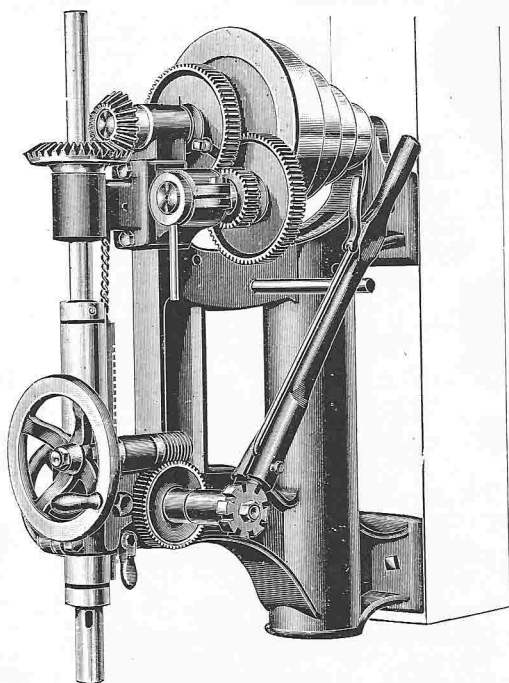
(With motor direct attached.)



Prices quoted on application.

No. 16. IMPROVED OVERHEAD OR HANGING DRILL.

(Back Geared. Lever and Screw Feed.)



The above cut represents our Overhead Drill with back gears. Distance from wall to spindle, 24½ inches; otherwise, same as No. 15 drill.

Length, 36 inches.

Weight, 440 pounds.

Boxed for export, 38x34x18 inches, 515 pounds.

Telegraphic Code.

Tralcio. With counter-shaft and lever feed,

Tralcuzzo. With counter-shaft and screw feed,

Traliccio. With counter-shaft, lever and screw feed combined,

Price.

\$120.00

125.00

130.00

DESCRIPTION OF THE AUTOMATIC SELF-RAISING QUICK RETURN

as used on our Drills Nos. 17, 18, and 19.

The feed screw has a small hole drilled its entire length, through which an extension from the spindle passes upward, and projecting through the top sufficiently for a small spiral spring and compression collar to be attached. This spring, being compressed sufficiently to overcome the slight friction of the feed screw in the feed nut, compels the feed screw to turn with the spindle and run up or down with it whichever way the machine is turned.

The thread on the feed screw being left hand, it runs upward when the machine is turned forward.

On the lower end of the feed screw is placed a clamping collar with a projection engaging in a slot in the frame of the drill. When the clamping screw in this collar is tight the feed screw is prevented from turning with the spindle and is actuated by the feed nut and automatic feed lever.

When the drill spindle has been forced downward to the extreme limit, a trip finger attached to clamping screw in collar comes in contact with a projection on the frame of the drill, and releases the clamping collar, permitting the feed screw to revolve with spindle and return to its starting point in a few revolutions.

The clamping screw in collar can be operated by the left hand releasing or engaging the feed at will, thereby giving the operator complete control of the machine without stopping it or taking his hand from the crank.

GEARING.

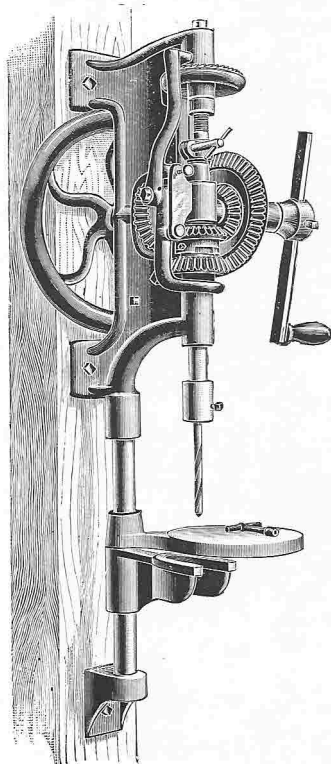
On all our double geared drills where balance wheel is placed on rear of frame, the change from fast to slow speed is quickly made and in the following manner: The upper gear on the spindle is slipped upward as far as possible, when it meshes with the small gear on crank shaft and is fastened by a set screw to the sleeve on which it slides and to which it is splined.

To reverse the operation, loosen the set screw and drop the gear until it locks to the lower gear by a clutch provided for this purpose.

With this system the balance wheel is driven at the same speed as the spindle on light work and nearly three times as fast on heavy work.

All the above mentioned drills are fitted with ball bearings where feed screw presses on to spindle.

No. 17. UPRIGHT SELF-FEEDING DRILL.



Patented May 22, 1894.

The above machine is double geared. Feed is adjustable to three changes. Has automatic Self-releasing Quick Return. Drills from 0 to $1\frac{1}{4}$ -inch hole, 3 inches deep, and to centre of 12-inch circle. Spindle arranged for $\frac{1}{2}$ -inch straight shank drills, or 41-64-inch if desired, and can be made to take taper or square shank drill at small advance in cost.

Length, 48 inches.

Weight, 135 pounds.

Boxed for export, 54x18x18 inches, 215 pounds.

Telegraphic Code.

Tralcoria. Hand,

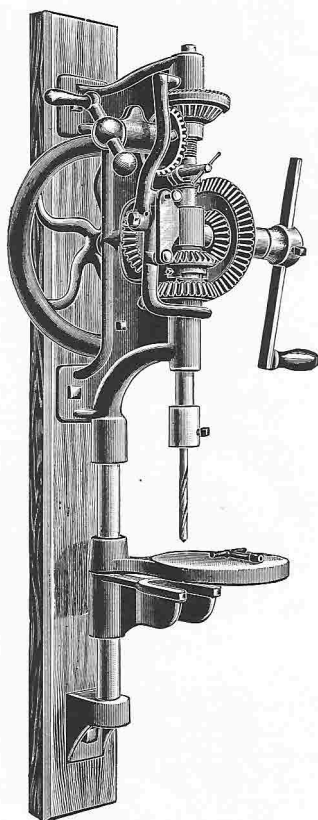
Tralcorian. With tight and loose pulleys, $8 \times 2\frac{1}{2}$ inches, for power,

Price.

\$30.00

33.00

No. 18. UPRIGHT SELF-FEEDING DRILL.



Patented May 22, 1894.

No. 18 is the same as No. 17, with the addition of hand feed, a desirable feature in many cases.

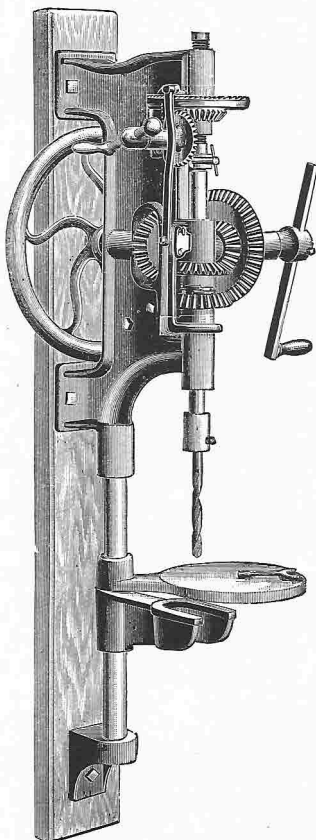
Length, 48 inches.

Weight, 140 pounds.

Boxed for export, 54x18x18 inches, 220 pounds.

Tralcoreux.	Hand,	\$33.00
Tralcorine.	With tight and loose pulleys, 8x2½ inches, for power,	36.00

No. 19. UPRIGHT SELF-FEEDING DRILL.



Patented May 22, 1894.

No. 19 is similar to No. 18, except it is heavier, being designed for heavy work. Drills 0 to $1\frac{1}{2}$ -inch hole, 5 inches deep, and to centre of 16-inch circle. Spindle is arranged for 41-64-inch straight shank drills, or $\frac{1}{2}$ -inch if desired, and can be made to take taper or square shank drills at small advance in cost.

Length, 60 inches.

Weight, 235 pounds.

Boxed for export, 67x23x21 inches, 330 pounds.

Telegraphic Code.

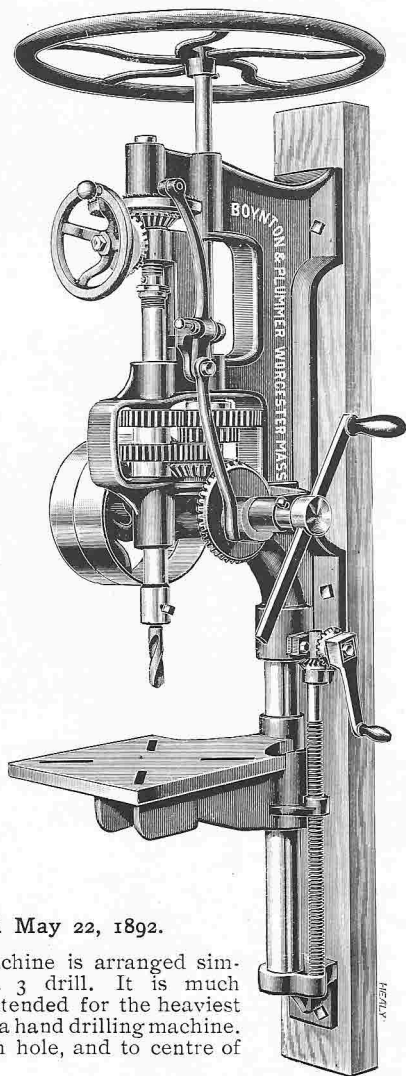
Tralcoreur. Hand,
Tralcorany. With tight and loose pulleys, 10x2 $\frac{1}{2}$
inches, for power,

Price.

\$47.00

51.00

No. 20. IMPROVED UPRIGHT SELF-FEEDING DRILL.



Patented May 22, 1892.

The above machine is arranged similar to our No. 3 drill. It is much heavier, being intended for the heaviest work required of a hand drilling machine. Drills 0 to $1\frac{1}{2}$ inch hole, and to centre of 22-inch circle.

Length, 75 inches.

Weight, 375 pounds.

Boxed for export, 75x28x16 inches, 535 pounds.

Telegraphic Code.

Tralcigno. Hand machine,

Tralcignet. With tight and loose pulleys, 10x2½ inches, for power,

Tralcignix. With 3-step cone and counter-shaft,

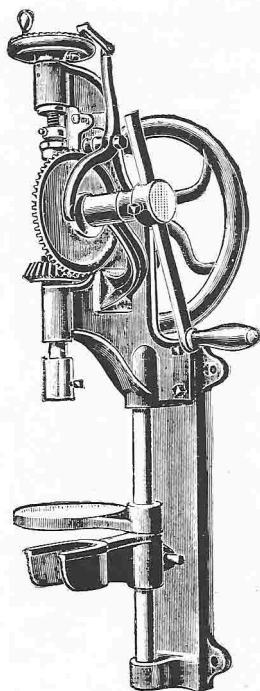
Price.

\$68.00

72.00

94.00

No. 21. UPRIGHT SELF-FEEDING DRILL.



No. 21 is a thoroughly-built machine, designed for light and medium work. It can be used as a bench drill if desired, as well as for a post drill. It has three changes of feed, with automatic stop, as on our Nos. 1, $1\frac{1}{2}$, 2, 3, etc. Drills 0 to $\frac{3}{4}$ -inch hole, $2\frac{1}{2}$ inches deep, and to centre of 13-inch circle. Spindle is arranged to take $\frac{1}{2}$ -inch straight shank drills, or 41-64-inch if desired, and can be made to take taper or square shank drills at small advance in cost.

Length, 42 inches.

Weight, 120 pounds.

Boxed for export, 44x18x15 inches, 175 pounds.

Telegraphic Code.

Tralquer. Hand,

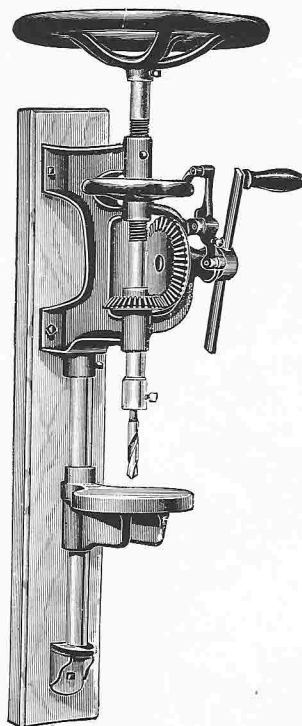
Tralqueron. With tight and loose pulleys, 7x2 inches,
es, for power,

Price.

\$20.00

23.00

No. 22. UPRIGHT SELF-FEEDING DRILL.



No. 22 drill is made to meet the wants of parties desiring a good, durable drill for light work. It is well made, and will give good satisfaction. Drills 0 to $\frac{7}{8}$ -inch hole, and to centre of $14\frac{1}{2}$ -inch circle. Spindle has feed of $4\frac{1}{2}$ inches, and is arranged to take $\frac{1}{2}$ -inch straight shank drills, or 41-64-inch if desired, and can be made to take taper or square shank drills at small advance in cost. It also has swinging table.

Length, 44 inches.

Weight, 100 pounds.

Boxed for export, 44x19x11 inches, 150 pounds.

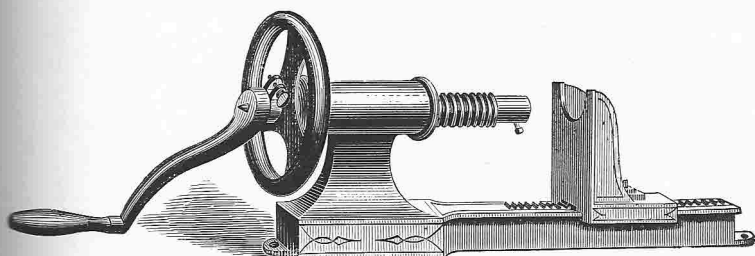
Telegraphic Code.

Tralquin.

Price.

\$15.00

No. 4. HORIZONTAL DRILL.



The above cut shows our No. 4 Horizontal Drill, with friction feed. Spindle is arranged for $\frac{1}{2}$ -inch straight shank drill, or $\frac{1}{4}$ -64-inch if desired.

Length, 26 inches.

Weight, 33 pounds.

Boxed for export, 31x12x10 inches, 60 pounds.

Telegraphic Code.

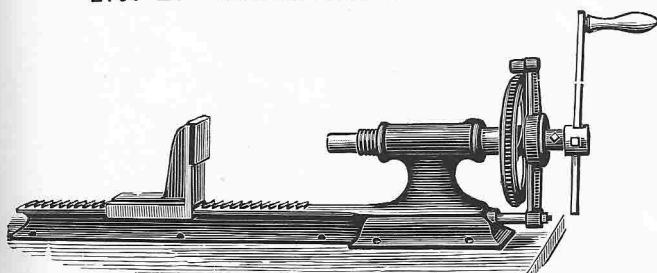
Traliedeur. With feed,
Traliekant. Without feed,

Price.

\$6.75

6.00

No. 2. HORIZONTAL DRILL.



Our Horizontal Drills are strong and well-made machines; well adapted to the work intended, and in many cases will answer the purpose of a more expensive machine. The above cut shows our No. 2. Spindle is arranged for $\frac{1}{2}$ -inch straight shank drills, or $\frac{1}{4}$ -64-inch if desired.

Length, 33 inches.

Weight, 45 pounds.

Boxed for export, 32x13x10 inches, 75 pounds.

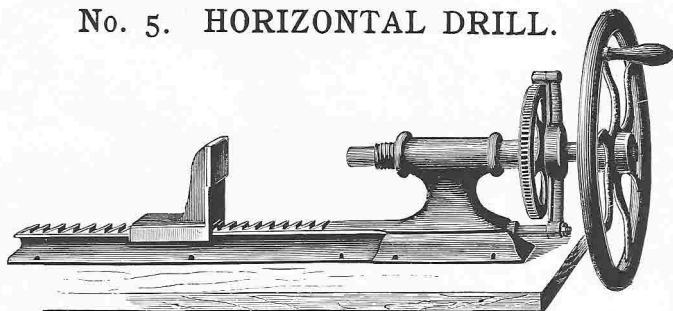
Telegraphic Code.

Tralielulk. As above,
Traliemand. With balance wheel (see cut No. 5 Horizontal Drill),

Price.

\$10.00

13.00

No. 5. HORIZONTAL DRILL.

No. 5 is always furnished with balance wheel; has three changes of automatic feed. Spindle is arranged for 41-64-inch straight shank drills, or $\frac{1}{2}$ -inch if desired.

Length, 44 inches.

Weight, 115 pounds.

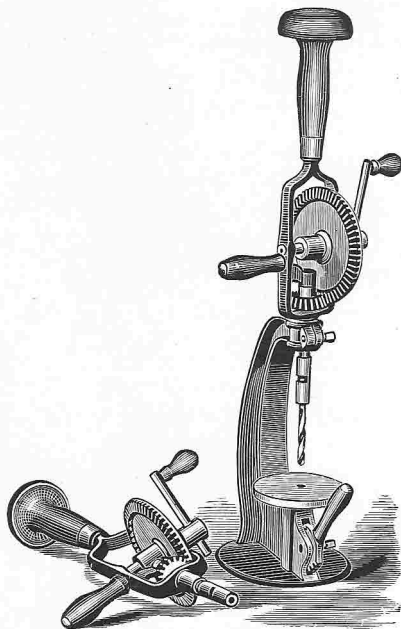
Boxed for export, 46x19x12 inches, 150 pounds.

Telegraphic Code.

Traliejes.

Price.

\$20.00

COMBINED BREAST AND UPRIGHT DRILL.

Weight of drill, 3 pounds; weight of drill and stand, 14 pounds.

Boxed for export, 26x12x10 inches, 25 pounds.

Telegraphic Code.

Traliewerk. Without stand,

Tralignato. With stand,

Price.

\$4.00

8.00

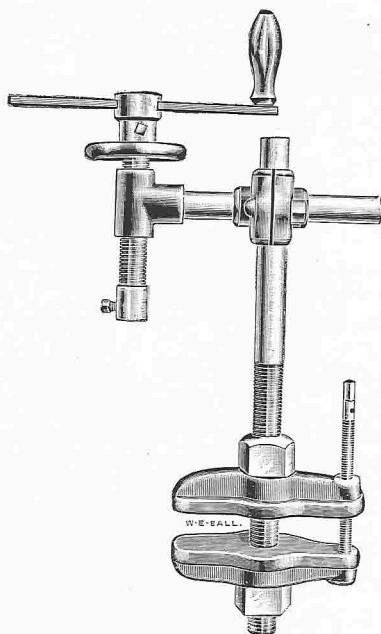
NEW SWIVEL CLAMP DRILLS.

(Self-Feeding.)

All of our clamp drills are furnished with our patent self-feeding attachment (not shown in illustrations), an entirely new feature in drills of this kind. This also, by reversing the motion of handle, secures a quick return of the drill bit, and leaves one hand always free to handle the work. No clamp drill is complete without it. These machines can also be used as a ratchet drill by adjustment of handle. All material used in their construction is of best quality. Are indispensable to iron bridge builders, architectural iron workers, boiler makers, railroad contractors, miners, etc., etc.

Spindle and post are of steel; clamps and swivel joints of malleable iron. Drill chucks can be fitted to machine when desired.

No. 1. NEW SWIVEL CLAMP DRILL. (Self-feeding.)



The above cut represents our No. 1 machine. Crank or handle is attached direct to spindle, and is a most convenient tool for light work. Drills 0 to $\frac{3}{8}$ -inch hole. Traverse of spindle, $2\frac{1}{2}$ inches. Greatest distance between clamps, 8 inches. Full length of post, 26 inches. Greatest distance from post to drill bit, $6\frac{1}{2}$ inches. Diameter of post, $1\frac{1}{4}$ inches. Spindle is arranged for $\frac{1}{2}$ -inch straight shank drills, or 41-64-inch if desired.

Weight, 28 pounds.

Boxed for export, 28x18x10 inches, 60 pounds.

Telegraphic Code.

Tramabais.

Price.

\$15.00

No. 2. NEW SWIVEL CLAMP DRILL. (Self-feeding. Geared.)

Description of No. 2 same as Nos. 3 and 4, varying only in size, being our smallest size geared drill. Drills 0 to $\frac{3}{8}$ -inch hole. Traverse of spindle, 3 inches. Greatest distance between clamps, 8 inches. Greatest distance from post to drill bit, 10 inches. Diameter of post, $1\frac{1}{4}$ inches. Full length of post, 26 inches. Spindle is arranged for $\frac{1}{2}$ -inch straight shank drills, or 41-64-inch if desired.

Weight, 30 pounds.

Boxed for export, 28x18x10 inches, 60 pounds.

Telegraphic Code.

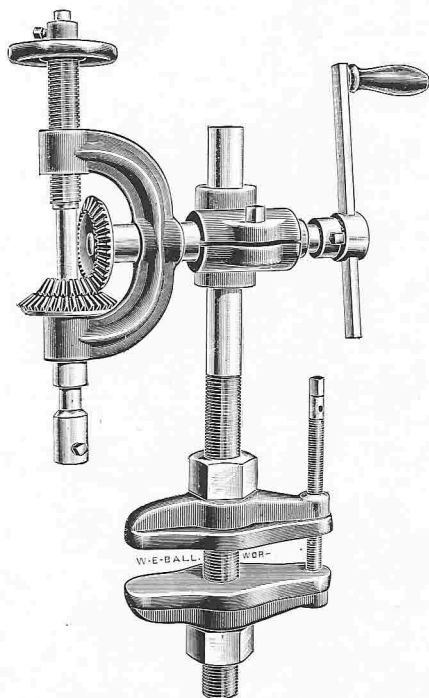
Tramadas.

Price.

\$20.00

No. 3. NEW SWIVEL CLAMP DRILL.

(Geared. Self-feeding.)



No. 3 has two sets or double gears for change of speed. When occasion requires it, handle may be attached direct to spindle as shown in cut of No. 1. Drills 0 to 1 inch hole. Traverse of spindle, $4\frac{1}{2}$ inches. Greatest distance between clamps, 7 inches. Greatest distance between post and drill bit, 10 inches. Diameter of post, 1 9-16 inches. Full length of post, 26 inches. Spindle is arranged for $\frac{1}{2}$ -inch straight shank drills, or 41-64-inch, if desired.

Weight, 65 pounds.

Boxed for export, 28x18x10 inches, 95 pounds.

Telegraphic Code.

Price.

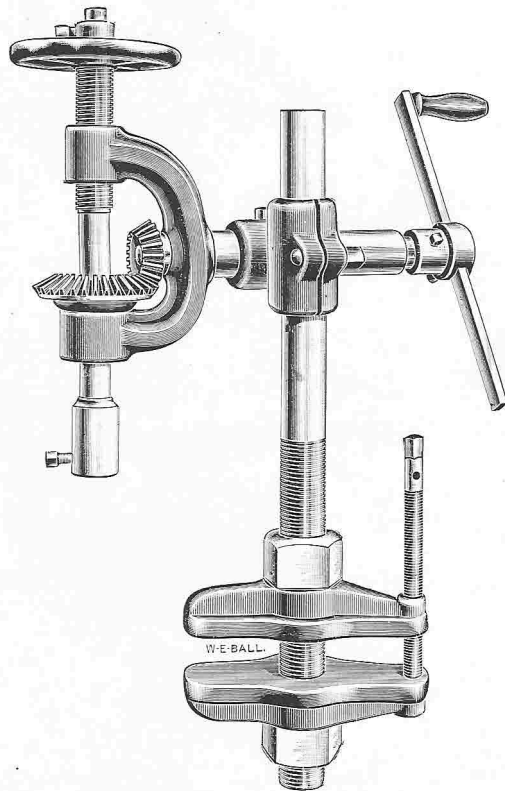
Tramais. With double gears,

\$25.00

Tramadora. With single gears,

23.00

In ordering state whether single or double gears are wanted.

No. 4. NEW SWIVEL CLAMP DRILL.**(Geared. Self-feeding.)**

The above cut represents No. 4, our largest clamp drill, and is suitable for very heavy work. Drills 0 to $1\frac{1}{2}$ -inch hole. Traverse of spindle, 4 inches. Greatest distance between clamps, 5 inches. Diameter of post, 2 inches. Full length of post, 28 inches. Greatest distance between post and spindle, 14 inches. Spindle is arranged for $\frac{1}{2}$ -inch straight shank drills, or 41-64-inch if desired.

Weight, 95 pounds.

Boxed for export, 30x18x10 inches, 130 pounds.

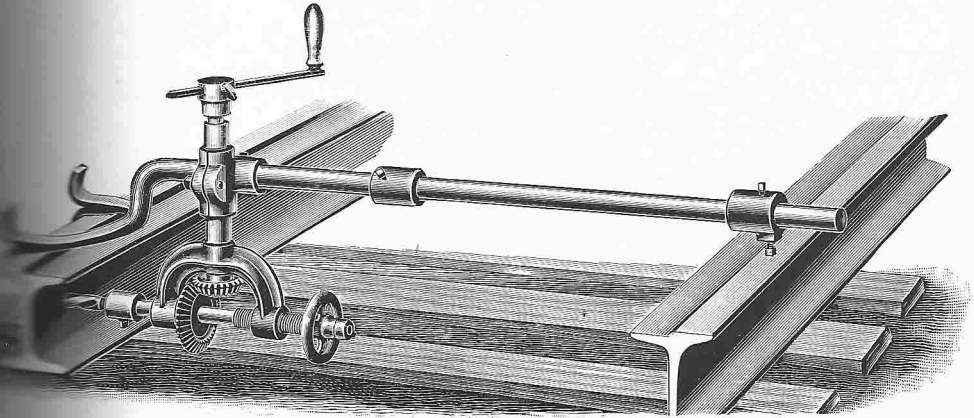
Telegraphic Code.

Tramaglio.

Price.

\$40.00

No. 1. RAILROAD TRACK DRILL.



The above cut represents our No. 3 Swivel Clamp Drill, arranged for drilling the rails of steam and electric railroads. Spindle is arranged for $\frac{1}{2}$ -inch straight shank drills, or 41-64 inch if desired, and can be made to take taper or square shank drills at small advance in cost.

Weight, 60 pounds.

Boxed for export, 36x18x10 inches, 100 pounds.

Telegraphic Code.

Tramtrack.

Price.

\$25.00

No. 4. SWIVEL CLAMP DRILL.

(Arranged in same manner.)

Weight, 90 pounds.

Boxed for export, 36x18x10 inches, 130 pounds.

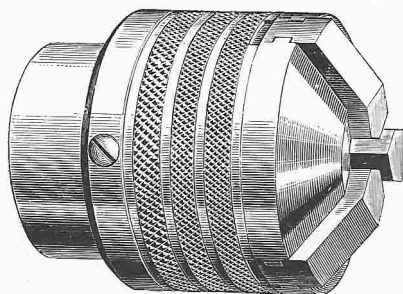
Telegraphic Code.

Tramroad.

Price.

\$40.00

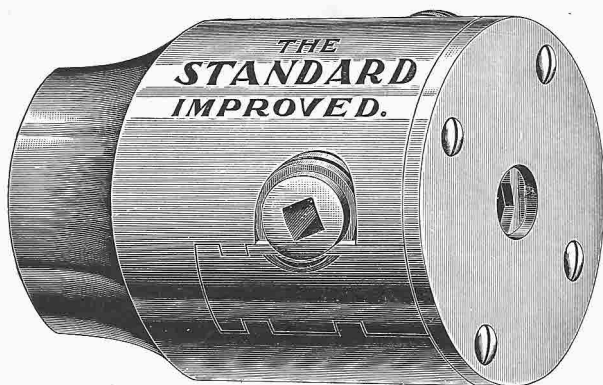
DRILL CHUCKS.



2-inch. For drills from 1-32 to 5-8-inch, price, \$4.

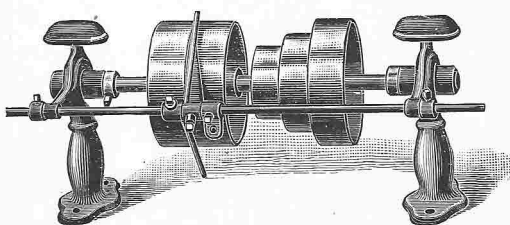
2½-inch. For drills from 1-32 to 3-4-inch, price, \$5.

A great saving is made in the price of small drills by the use of drill chucks, which we fit to our machines when ordered. Spindles of our machines fitted to square shank or taper shank drill-bits when desired, at slight advance in cost.



Number.	Price, Each.	Diameter, Inches.	Length, Inches.	Capacity, Inches.
00	\$6.00	1 $\frac{3}{8}$	2 $\frac{3}{32}$	0 to $\frac{1}{4}$
0	6.50	1 $\frac{1}{8}$	2 $\frac{1}{32}$	0 to $\frac{3}{8}$
1	7.00	2 $\frac{3}{16}$	2 $\frac{1}{16}$	0 to $\frac{1}{2}$
2	8.00	2 $\frac{7}{8}$	3 $\frac{3}{8}$	0 to $\frac{3}{4}$
3	10.00	3 $\frac{7}{16}$	4 $\frac{1}{4}$	0 to 1

COUNTER-SHAFT.

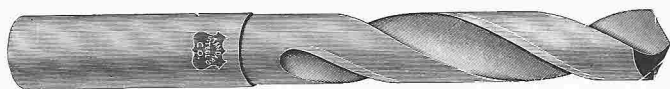


For Nos. 3 and 4 drilling machines, price, \$20.

Size of driving pulleys, 10 inches diameter, $2\frac{1}{2}$ -inch face. Cone,
10, 8 and 6 inches, $2\frac{1}{2}$ -inch face.

Other sizes to order.

TWIST DRILLS.



Diameter.	Morse Taper Shank.		Extreme length of drill, 6 inches.		Shank same size of drill, for use in chuck.	
	Price, each.	Length.	41-64 shank.	1/2 in. shank.		
I-8			\$.55	\$.45	I-16	.09
5-32			.58	.45	5-64	.10
3-16			.60	.50	3-32	.11
7-32			.65	.55	7-64	.12
I-4	\$.60	6 I-8	.70	.60	I-8	.13
9-32	.65	6 I-4	.73	.65	9-64	.15
5-16	.70	6 3-8	.75	.70	5-32	.16
11-32	.75	6 I-2	.80	.73	11-64	.18
3-8	.80	6 3-4	.85	.75	3-16	.20
13-32	.85	7	.88	.78	13-64	.21
7-16	.90	7 I-4	.90	.80	7-32	.23
15-32	.95	7 I-2	.93	.83	15-64	.26
I-2	1.00	7 3-4	.95	.85	I-4	.28
17-32	1.10	8	.98	.88	17-64	.30
9-16	1.20	8 I-4	1.00	.90	9-32	.32
19-32	1.30	8 I-2	1.03	1.00	19-64	.35
5-8	1.40	8 3-4	1.05	1.05	5-16	.37
21-32	1.50	9	1.10	1.10	21-64	.40
11-16	1.60	9 I-4	1.15	1.15	11-32	.42
23-32	1.70	9 I-2	1.20	1.20	23-64	.45
3-4	1.85	9 3-4	1.25	1.25	3-8	.48
25-32	2.00	9 7-8	1.30	1.30	25-64	.50
13-16	2.15	10	1.35	1.35	13-32	.53
27-32	2.30	10 I-4	1.40	1.40	27-64	.55
7-8	2.45	10 I-2	1.45	1.45	7-16	.59
29-32	2.60	10 5-8	1.55	1.50	29-64	.63
15-16	2.75	10 3-4	1.60	1.60	15-32	.65
31-32	2.90	10 7-8	1.70	1.70	31-64	.67
I	3.00	11	1.80	1.80	I-2	.70
I I-32	3.20	11 I-8	1.90	1.90		
I I-16	3.40	11 I-4	2.00	2.00		
I 3-32	3.60	11 I-2	2.10	2.10		
I I-8	3.80	11 3-4	2.20	2.20		
I 5-32	4.00	11 7-8	2.25	2.25		
I 3-16	4.20	12	2.30	2.30		
I 7-32	4.40	12 I-8	2.35	2.35		
I I-4	4.50	12 I-4	2.40	2.40		
I 9-32	4.65	14 I-8	2.50	2.50		
I 5-16	4.80	14 I-4	2.60	2.60		
I 11-32	5.00	14 3-8	2.70	2.70		
I 3-8	5.20	14 I-2	2.80	2.80		
I 13-32	5.40	14 5-8	2.90	2.90		
I 7-16	5.60	14 3-4	3.00	3.00		
I 15-32	5.80	14 7-8	3.10	3.10		
I I-2	6.00	15	3.20	3.20		

Any length or style of drill furnished to order.

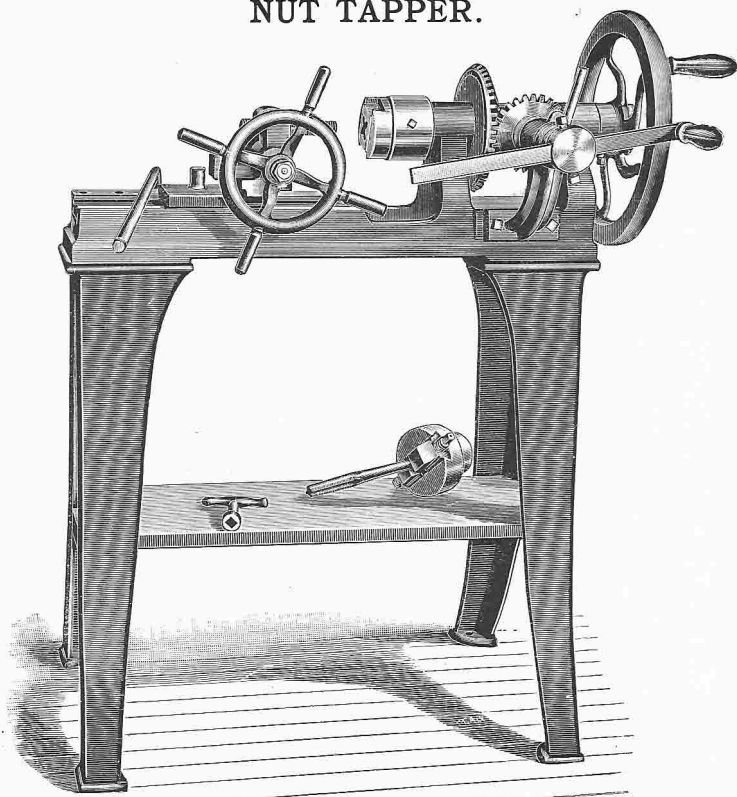
BOLT-CUTTING AND NUT-TAPPING MACHINES.

The following cuts represent our Bolt-cutting and Nut-tapping Machines, adapted for threading all sizes of bolts and nuts from $\frac{1}{4}$ to $1\frac{1}{2}$ inches in diameter. With these machines, large sized bolts can be threaded with greater ease and facility than with any other of similar make; while small sizes can be cut as rapidly as with a small machine. For cutting threads on large bolts, the machine is operated by the crank handle in the balance wheel. The side crank is used when greater speed and less power are required, as when cutting small bolts, or for backing out large ones after they have been cut. Either of these crank devices may be quickly detached, so that the other may be used separately, or both may be used together. The vise-jaws for holding the bolts are made from fine hardened steel, are connected by a one-inch steel operating screw, while the tap-jaws are of similar construction, thus rendering the machine very strong and durable, and not liable to become quickly worn out by use. These machines are constructed to accomplish the work intended, with the least number of parts to get out of repair, of any tool of their kind. They are easily operated and in many cases take the place and are more desirable than a higher cost machine. We are confident that it will prove to the advantage of persons desiring machines of this class, to consider the relative merits and capacity of these machines before adopting another.

All sizes of bolt-cutters, when ordered, without specifying to the contrary, are furnished with taps and dies for rough iron sizes, that is, 1-32 inch large; and V thread. Solid or adjustable dies furnished, as may be desired. In ordering, please be careful to state whether solid or adjustable dies are wanted.

All parts for repairs can be duplicated on receipt of orders.

No. 1. IMPROVED HAND BOLT CUTTER AND NUT TAPPER.



Cuts $\frac{1}{4}$, $\frac{5}{16}$, $\frac{3}{8}$, $\frac{7}{8}$, $\frac{1}{2}$, $\frac{5}{8}$, $\frac{3}{4}$ inch.

Weight, 275 pounds. Boxed for export, 36x22x16 inches 345 pounds.

Telegraphic Code.

Price.

Trallquor. Without taps and dies,

\$53.00

Trallquent. With taps and solid dies,

65.00

Trallquina. With taps and adjustable dies,

73.00

No. 1. IMPROVED HAND BOLT CUTTER AND NUT TAPPER.

(For bench. Without legs.)

Weight, 200 pounds. Boxed for export, 36x16x16 inches, 250 pounds.

Telegraphic Code.

Price.

Tralignavi. Without taps and dies,

\$46.00

Trallacio. With taps and solid dies,

58.00

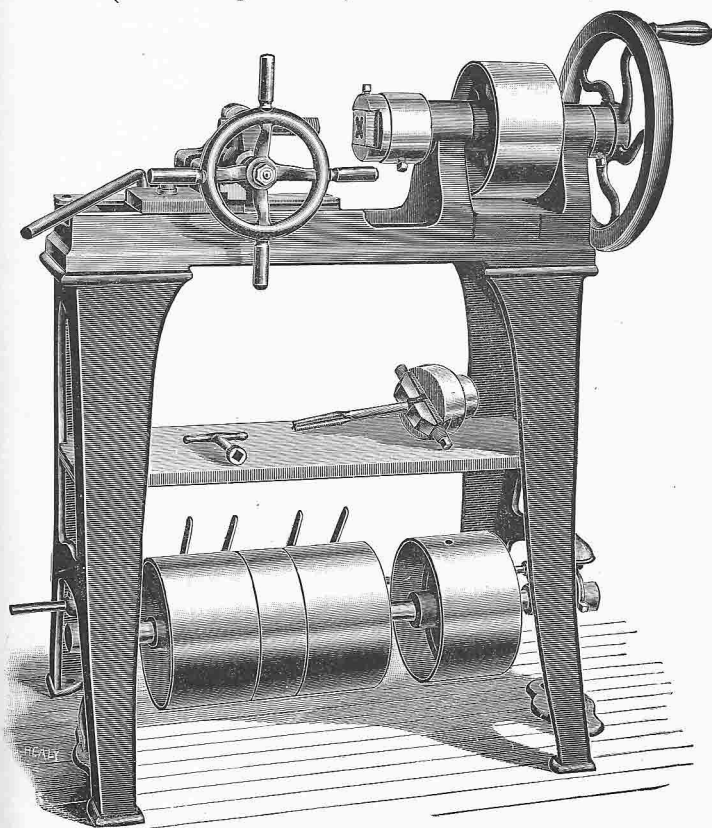
Tralles. With taps and adjustable dies,

66.00

Above prices include tap chuck, wrench and solid die holder.

No. 1. IMPROVED POWER BOLT CUTTER AND NUT TAPPER.

(With Single Pulley and Countershaft.)



Cuts $\frac{1}{4}$, $\frac{5}{16}$, $\frac{3}{8}$, $\frac{7}{16}$, $\frac{1}{2}$, $\frac{5}{8}$ inch.

Weight, 350 pounds. Boxed for export, 36x22x18 inches, 420 pounds.

Telegraphic Code.

Price.

Trallquench. Without taps and dies,
Trallquash. With taps and solid dies,
Trallquisa. With taps and adjustable dies,

\$59.00
69.00
76.00

Size of pulley on spindle, 8x4 inches.

Size of driving pulleys on countershaft, 9x5 inches.

ABOVE MACHINE ARRANGED FOR BENCH.

(Without legs.)

Weight, 275 pounds. Boxed for export, 36x18x16 inches, 340 pounds.

Telegraphic Code.

Price.

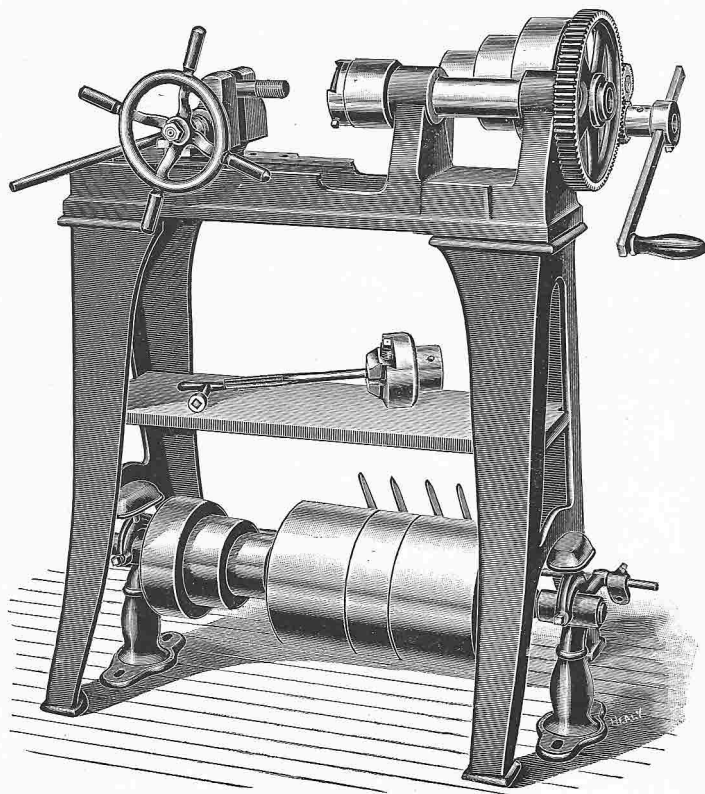
Trallset. Without taps and dies,
Trallsing. With taps and solid dies,
Trallsack. With taps and adjustable dies,

\$52.00
62.00
69.00

Above prices include tap chuck, wrench and solid die holder.

No. 1. IMPROVED POWER BOLT CUTTER AND NUT TAPPER.

(With Cone and Countershaft.)



Cuts $\frac{1}{4}$, $\frac{5}{16}$, $\frac{3}{8}$, $\frac{7}{16}$, $\frac{1}{2}$, $\frac{5}{8}$, $\frac{3}{4}$ inch.
Geared 5 to 1. Weight, 375 pounds.
Boxed for export, 36x22x18 inches, 445 pounds.

Telegraphic Code.

Trallquiz. Without taps and dies,
Trallqueza. With taps and solid dies,
Trallquevo. With taps and adjustable dies,

Price.

\$68.00
80.00
88.00

Speed for countershaft, about 175 turns per minute.

Tight and loose pulleys, 9x5 inches.

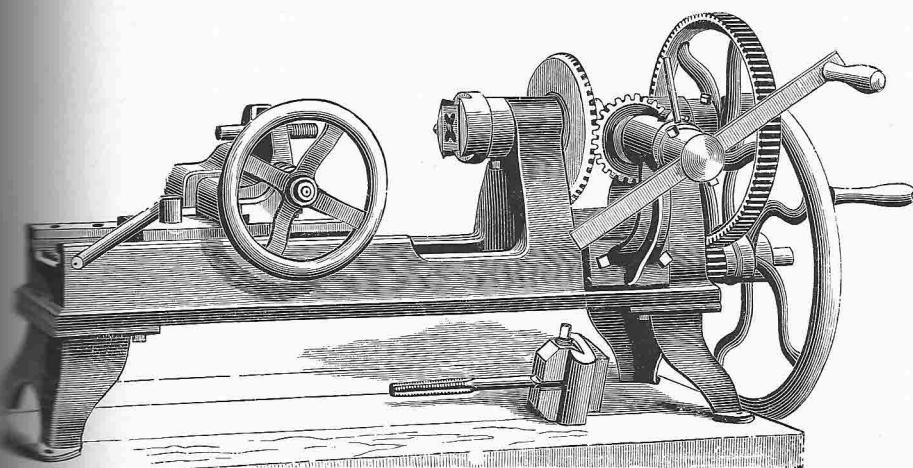
Cone pulley, 3-step, $7\frac{1}{2}$, $5\frac{3}{4}$, 4 inches, for $2\frac{1}{2}$ -inch belt.

Above prices include tap-chuck, wrench and solid die holder.

The attachment to enable this machine to be used by hand is frequently of service on repair work when power is not available. It can be easily removed when not in use.

No. 2. HAND BOLT CUTTER AND NUT TAPPER.

(On short legs.)



Cuts $\frac{1}{4}$, $\frac{5}{16}$, $\frac{3}{8}$, $\frac{7}{16}$, $\frac{1}{2}$, $\frac{5}{8}$, $\frac{3}{4}$, $\frac{7}{8}$, 1, $1\frac{1}{8}$, $1\frac{1}{4}$.

Geared 5 to 1.

Weight, 225 pounds.

Boxed for export, 46x19x22 inches, 400 pounds.

Telegraphic Code.

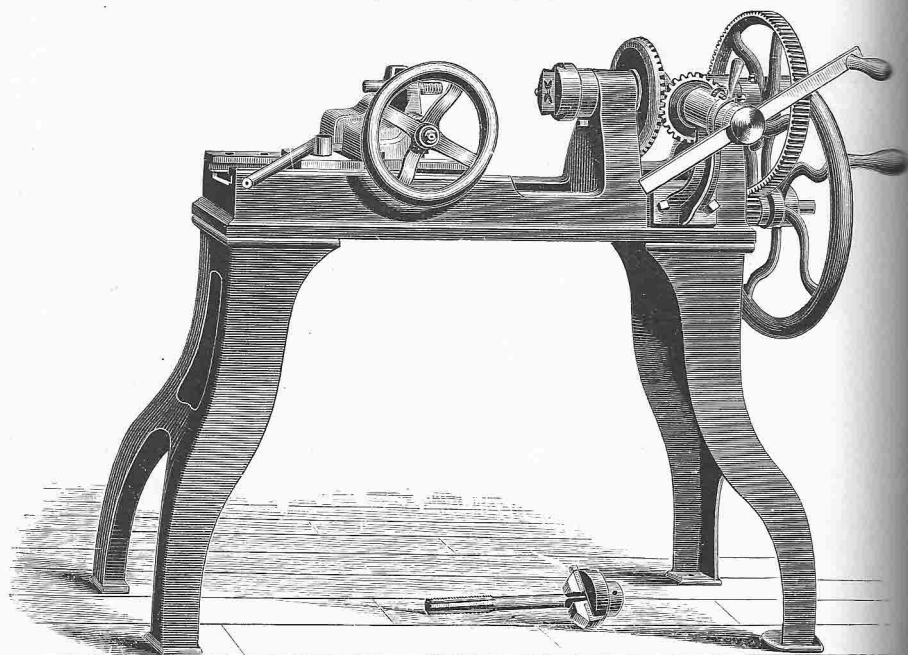
Price.

Trambusto.	Without taps and dies,	\$65.00
Tramerait.	With taps and solid dies, $\frac{1}{4}$ to 1 inch,	85.00
Trameriez.	With taps and solid dies, $\frac{1}{4}$ to $1\frac{1}{4}$ inches,	95.00
Tramesto.	With taps and adjustable dies, $\frac{1}{4}$ to 1 inch,	95.00
Tramettere.	With taps and adjustable dies, $\frac{1}{4}$ to $1\frac{1}{4}$ inches,	110.00
	With two-step cone pulley and countershaft for power (see cut No. 3 power) extra,	15.00

If machine is wanted for power add "baum" to code word.
Above prices include tap chuck, wrenches, solid die holder.

No. 2. HAND BOLT CUTTER AND NUT TAPPER.

(On long legs.)



Cuts $\frac{1}{4}$, $\frac{5}{16}$, $\frac{3}{8}$, $\frac{7}{16}$, $\frac{1}{2}$, $\frac{5}{8}$, $\frac{3}{4}$, $\frac{7}{8}$, 1, $1\frac{1}{8}$, $1\frac{1}{4}$.

Geared 5 to 1.

Weight, 345 pounds.

Boxed for export, 46x24x18 inches, 415 pounds.

Telegraphic Code.

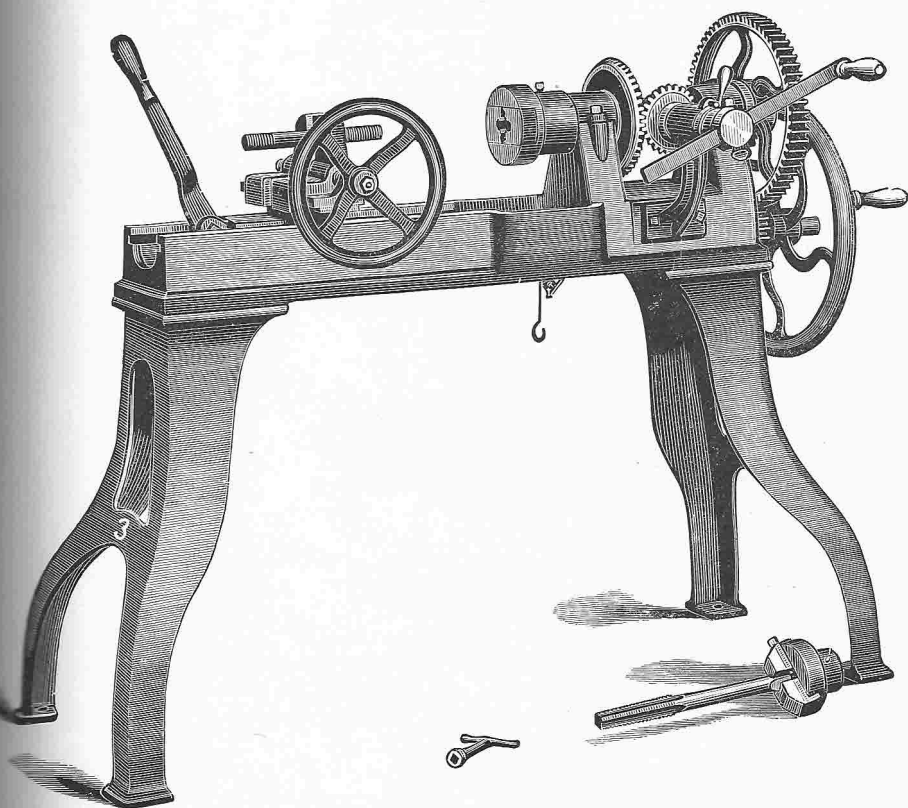
		Price.
Tramdienst.	Without taps and dies,	\$70.00
Trameront.	With taps and solid dies, $\frac{1}{4}$ to 1 inch,	90.00
Tramestano.	With taps and solid dies, $\frac{1}{4}$ to $1\frac{1}{4}$ inches,	100.00
Trametteva.	With taps and adjustable dies, $\frac{1}{4}$ to 1 inch,	100.00
Trameurs.	With taps and adjustable dies, $\frac{1}{4}$ to $1\frac{1}{4}$ inches,	115.00

Above prices include tap chuck, wrench, solid die holder.

With two-step cone and countershaft (see cut
No. 3 power), extra, 15.00

If machine is wanted for power add "baum" to code word.

No. 3. HAND BOLT CUTTER AND NUT TAPPER.



Cuts $\frac{3}{8}$, $\frac{7}{16}$, $\frac{1}{2}$, $\frac{5}{8}$, $\frac{3}{4}$, $\frac{7}{8}$, 1, $1\frac{1}{8}$, $1\frac{1}{4}$, $1\frac{3}{8}$, $1\frac{1}{2}$.

Geared 5 to 1.

Weight, 500 pounds.

Boxed for export, 58x24x20 inches, 600 pounds.

Telegraphic Code.

Trame.

Tramestare.

Tramigrabo.

Without taps and dies,

With taps and solid dies, $\frac{3}{8}$ to $1\frac{1}{2}$ inches,

With taps and adjustable dies, $\frac{3}{8}$ to $1\frac{1}{2}$ inches,

Price.

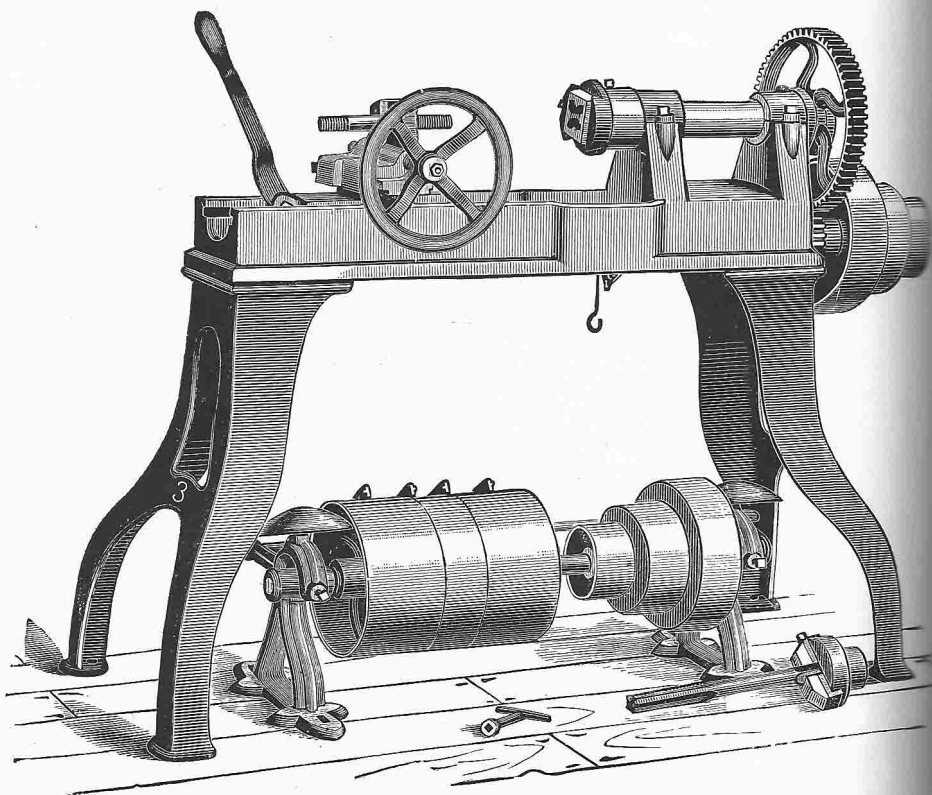
\$95.00

135.00

155.00

Above prices include tap chuck, wrenches, solid die holder.

No. 3. POWER BOLT CUTTER AND NUT TAPPER



Cuts $\frac{3}{8}$, $\frac{7}{16}$, $\frac{1}{2}$, $\frac{5}{8}$, $\frac{3}{4}$, $\frac{7}{8}$, 1, $1\frac{1}{8}$, $1\frac{1}{4}$, $1\frac{3}{8}$, $1\frac{1}{2}$.

Geared 5 to 1.

Weight, 550 pounds.

Boxed for export, 58x24x20 inches, 650 pounds.

Telegraphic Code.

Tramemos.

Tramestava.

Tramigravi.

Without taps and dies,

With taps and solid dies, $\frac{3}{8}$ to $1\frac{1}{2}$ inches, \$110.00

With taps and adjustable dies, $\frac{3}{8}$ to $1\frac{1}{2}$ inches,

170.00

Price.

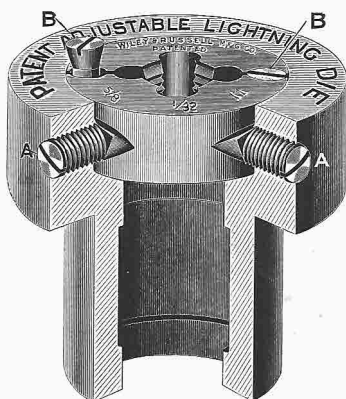
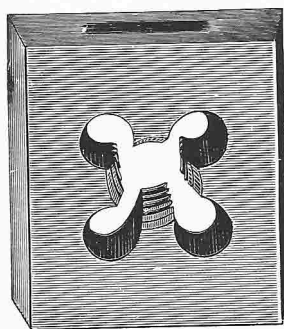
Above prices include countershaft, tap chuck, solid die holder.

Speed for countershaft 100 turns per minute. Driving pulleys 10 x $2\frac{3}{4}$ inches.

Hand attachment, extra, \$2.00. (When wanted add "T" to code word.)

PRICE-LIST OF MACHINE TAPS AND DIES.

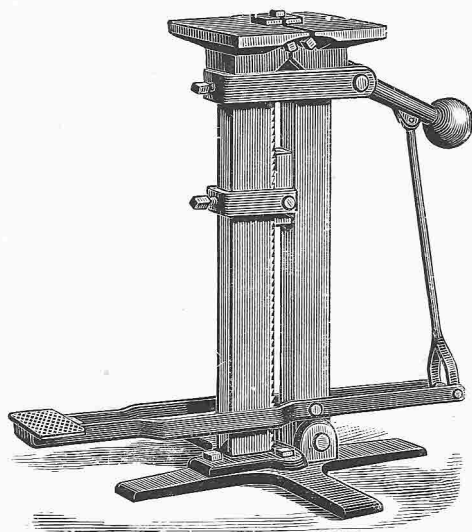
Diameter.	Pitch.	Taps, each.	Solid Dies, each. $2\frac{3}{4} \times 2\frac{3}{4}$ square. 3×3 square.	Adjustable Dies, with Collets, each.
$\frac{1}{4}$	20	\$0 60	\$1 80	\$2 00
$\frac{5}{16}$	18	70	1 80	2 00
$\frac{3}{8}$	16	80	1 80	2 15
$\frac{7}{16}$	14	90	1 80	2 30
$\frac{1}{2}$	12	1 00	1 80	2 50
$\frac{9}{16}$	12	1 15	2 00	2 60
$\frac{5}{8}$	11	1 30	2 00	2 75
$\frac{11}{16}$	11	1 45	2 15	2 90
$\frac{3}{4}$	10	1 60	2 20	3 00
$\frac{13}{16}$	10	1 80	2 30	3 25
$\frac{7}{8}$	9	2 10	2 40	3 50
$\frac{15}{16}$	9	2 40	2 55	3 75
1	8	2 80	2 70	4 00
$1\frac{1}{8}$	7	3 20	3 00	4 50
$1\frac{1}{4}$	7	3 70	3 30	5 50
$1\frac{3}{8}$	6	4 20	3 60	6 00
$1\frac{1}{2}$	6	4 70	3 90	6 50



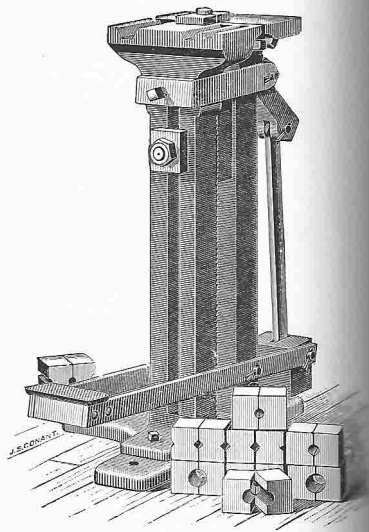
The above sizes of taps and dies, when ordered with or for our machines, are always sent rough iron sizes and V threads, unless otherwise specified. Whitworth, United States or V threads, exact size, furnished at same prices when ordered.

BOLT-HEADING MACHINES.

No. 1.



No. 2.



No. 1.

Heads bolts $\frac{1}{4}$, $\frac{5}{16}$, $\frac{3}{8}$, $\frac{7}{16}$, $\frac{1}{2}$, $\frac{9}{16}$, $\frac{5}{8}$, $\frac{3}{4}$, $\frac{7}{8}$, 1 inch.

Weight, 225 pounds.

Boxed for export, 37x23x13 inches, 300 pounds.

Telegraphic Code.

Tranchelim. With cast-iron dies,

Tranchasse. With steel dies,

Price.

\$40.00

55.00

No. 2.

Heads bolts $\frac{1}{4}$, $\frac{5}{16}$, $\frac{3}{8}$, $\frac{7}{16}$, $\frac{1}{2}$, $\frac{9}{16}$, $\frac{5}{8}$, $\frac{3}{4}$, $\frac{7}{8}$, 1, $1\frac{1}{8}$, $1\frac{1}{4}$, $1\frac{3}{8}$, $1\frac{1}{2}$ inches.

Weight, 400 pounds.

Boxed for export, 37x21x22 inches, 490 pounds.

Telegraphic Code.

Tranchames. With cast-iron dies,

Tranche. With steel dies,

Price.

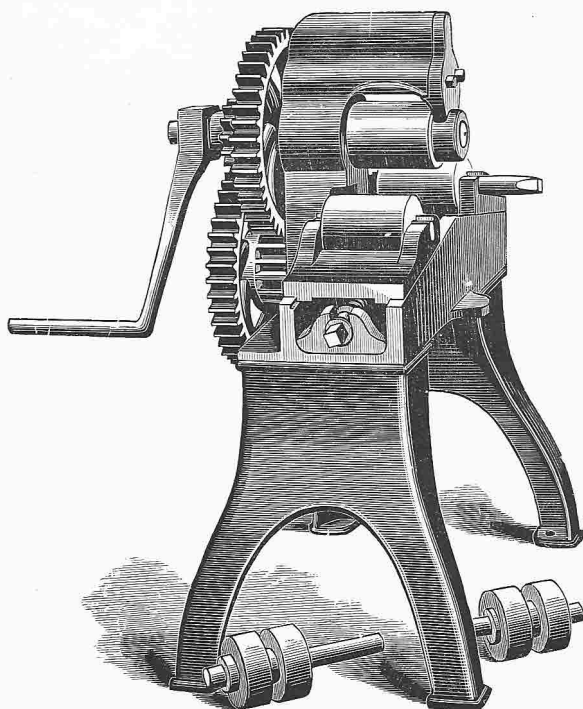
\$60.00

87.00

Will head bolts any length desired.

These machines are a valuable tool in shops using bolts of any kind, as the time going to store for ready-made bolts and welding same to make a long bolt is saved by making the bolt-head on this machine. They are strongly built, and capable of standing a large amount of heavy work.

No. 1 TIRE BENDER.



This is a strong and well-made machine, having open side so that tires can be taken out without springing. The bearings or track of carriages on all our tire benders are planed perfectly parallel, which insures the tire going through the rolls and the ends coming together perfectly square. A pair of grooved rolls for bending iron edgewise is furnished when ordered. Also tight and loose pulleys can be fitted to the machine for power when desired. It will bend tires from the lightest to $\frac{3}{4}$ inch thick by 5 wide.

Geared 9 to 1.
Weight, 500 pounds.

Speed for pulleys about 120 turns per minute.
Boxed for export, 34x22x21 inches, 550 pounds.

Telegraphic Code.

		Price.
Tranto.	Hand machine, with plain rolls,	\$45.00
Trancifio.	Hand machine with grooved rolls,	60.00
Trancar.	With plain rolls and 16x3 $\frac{1}{2}$ -inch pulleys for power,	60.00
Tranzio.	With grooved rolls and 16x3 $\frac{1}{2}$ -inch pulleys for power,	75.00

No. 2 TIRE BENDER.

Same as No. 1, but smaller; bending iron to $\frac{3}{8}$ inches thick by 3 inches wide.

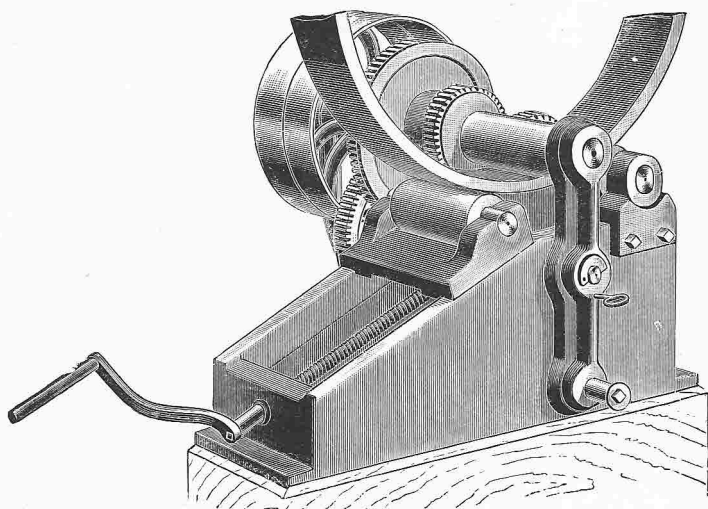
Geared 9 to 1.
Weight, 250 pounds.

Speed for pulleys about 150 turns per minute.
Boxed for export, 34x26x17 inches, 300 pounds.

Telegraphic Code.

		Price.
Trancade.	Hand machine with plain rolls,	\$24.00
Trancahilo.	Hand machine with grooved rolls,	36.00
Trancazos.	With plain rolls and 14x3-inch pulleys for power,	36.00
Trancazio.	With grooved rolls and 14x3-inch pulleys for power,	48.00

No. 3 TIRE BENDER.



This machine is very powerful, and especially designed for very heavy work, but is adapted to bending from the lightest to the heaviest tires, taking $\frac{1}{4}$ inch to $1\frac{1}{4}$ inches thick and to 10 inches wide. The upper and lower stationary rolls are geared together by very strong gears, and so arranged that the tire can be taken out after bending without removing any of the gears or rolls, by slipping the side bar or brace off from the shaft of the top roll, when it will swing down on lower stud or shaft. For bending iron edgewise it is furnished with collars, which are slipped over the rolls to form a groove; same collars are also used when bending very light tires for a small circle. Rolls are made of steel.

Geared 18 to 1.

Weight, 1000 pounds.

Boxed for export, 43x43x34 inches, 1155 pounds.

Telegraphic Code.

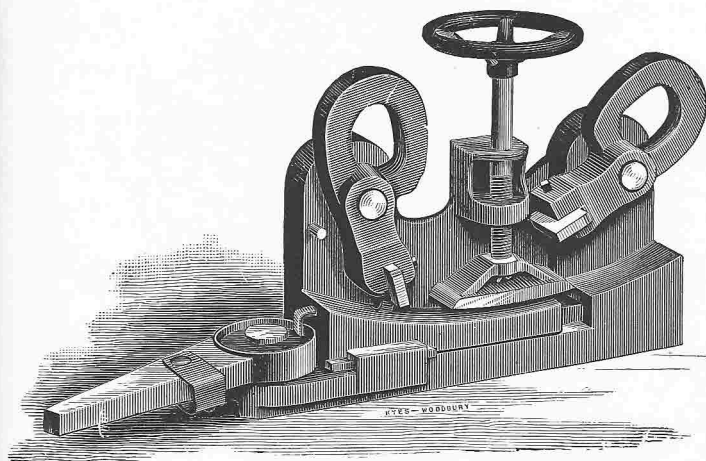
Trancadura. Complete for hand,

Price.
\$100.00

Trancedly. Complete with 18x4-inch tight and loose pulleys for power,

120.00

Speed for pulleys, about 60 turns per minute.

No. 1. TIRE SHRINKER.

No. 1 will upset tires $\frac{5}{8}$ inch thick by 4 inches wide. Is furnished with clamp in centre, which is brought down on tire by means of wheel and screw, to prevent tire from kinking when being upset.

Weight, 150 pounds.

Boxed for export, 22x17x12 inches, 185 pounds.

Telegraphic Code.
Tramuterei.

Price.
\$20.00

No. 2. TIRE SHRINKER.

Is the same as No. 1 without the clamp, wheel and screw, kinking of the tire being prevented by hammer in the hands of operator.

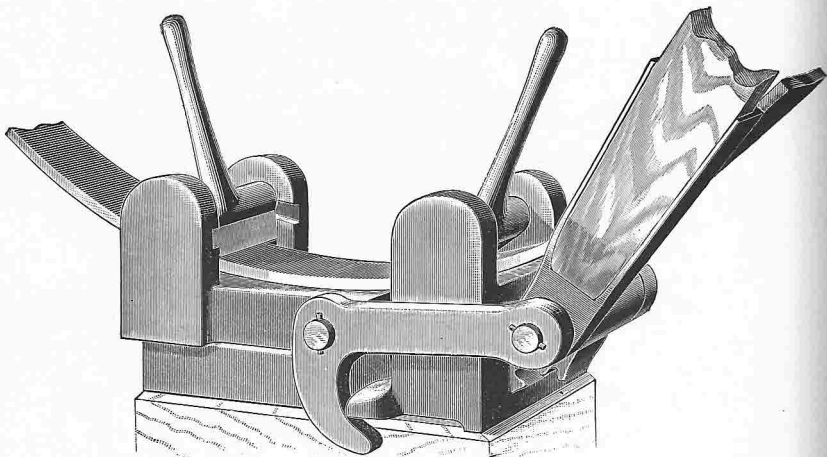
Weight, 125 pounds.

Boxed for export, 22x17x12 inches, 160 pounds.

Telegraphic Code.
Tramuti.

Price.
\$15.00

No. 3. TIRE SHRINKER.



No. 3 is a large machine especially adapted for all sizes of tires, to 1 1-4 inches thick, to 8 inches wide.

Weight, 400 pounds.

Boxed for export, 28x25x19 inches, 500 pounds.

Telegraphic Code.

Tramwagen.

Price.

\$60.00

Directions. When setting the machine, fasten it securely on a block about one foot high; fasten block to floor or ground in a solid manner; see that lever holder is put on so as to get the full use of cam. Use the longest dogs or clamps for thinnest tires. See that work when set has a bearing on machine under dogs as much as possible; use a strong, hard wood lever eight or ten feet long; fasten same in lever socket. Heat the work to a good white heat, and after bringing dogs down on work, apply the power to lever, bringing it down to a horizontal position.

No. 4. TIRE SHRINKER.

Same as No 3, but smaller, taking tires to $\frac{7}{8}$ inch thick, to 5 inches wide.

Weight, 225 pounds.

Boxed for export, 24x22x17 inches, 300 pounds.

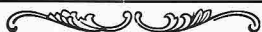
Telegraphic Code.

Tramway.

Price.

\$25.00

PORTABLE FORGES.



TO THE DEALER IN FORGES.

We can say that in the illustrations following we present the most complete line of portable forges ever offered to the trade, in the variety of sizes and in manner of operating with gear or by clutch.

TO THE USER.

We say that being the latest on the market, we have been able to take advantage of all the errors of past manufactures, so as to eliminate all defects and errors heretofore made, and combine in these forges all the best elements desirable in a tool of this kind.

We intend that these forges, like our well-known drilling machines, shall be the *standard* tool of this kind on the market. It therefore seems needless for us to say that they are made in the best manner, and that the materials used in their construction are of the best quality.

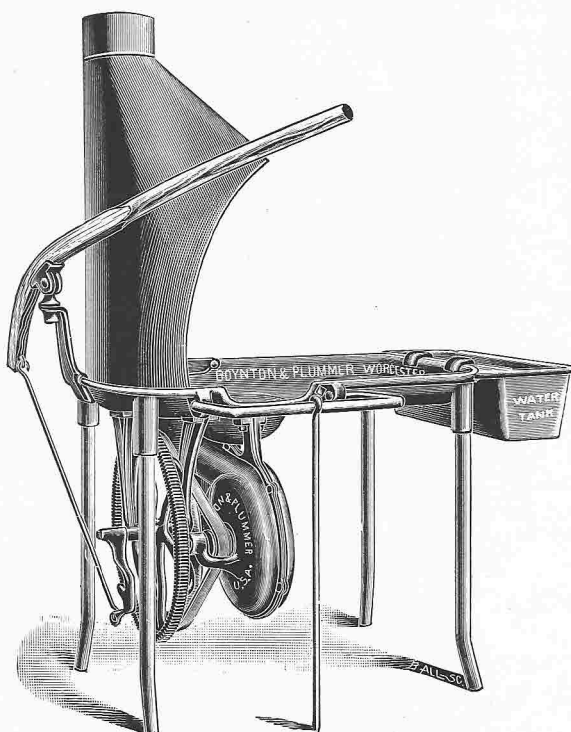
Our geared forges are constructed so as to prevent the least possible noise. The device used is a small gear made to run on the inside of the large gear, and in operating is made to lock into same by means of a pawl operating on the small gear; this also prevents any wear on the large gear by the pawl as on forges of this kind, making it almost impossible to wear it out.

The special feature in our clutch forge is the simplicity of its clutch; fewer pieces are used in it than any clutch made—being entirely free from a mass of traps, such as bolts and nuts, leathers, rubber balls, etc.; it is practically indestructible; particularly adapted to parties desiring a forge without noise, and where a geared forge would be undesirable.

Hoods on our forges are made of sheet-steel, which makes them strong and stiff.

All parts for repairs can be furnished on receipt of orders.

No. o. BLACKSMITH'S GEARED FORGE.



This forge is adapted to blacksmith shops, or to shops having a large amount of heavy blacksmithing. It is superior to a bellows and brick forge, costs less, and has the advantage over such, as it can be placed in any location in the shop regardless of the chimney. It is capable of producing welding heat on 3-inch iron in four minutes, or 4-inch iron in ten minutes.

Height, 32 inches; hearth, $46\frac{1}{2}$ x26 inches; without tank, 38x26 inches; fan, 14 inches; weight, 325 pounds; without tank, 275 pounds. Packed for export, 40x36x32 inches, 350 pounds.

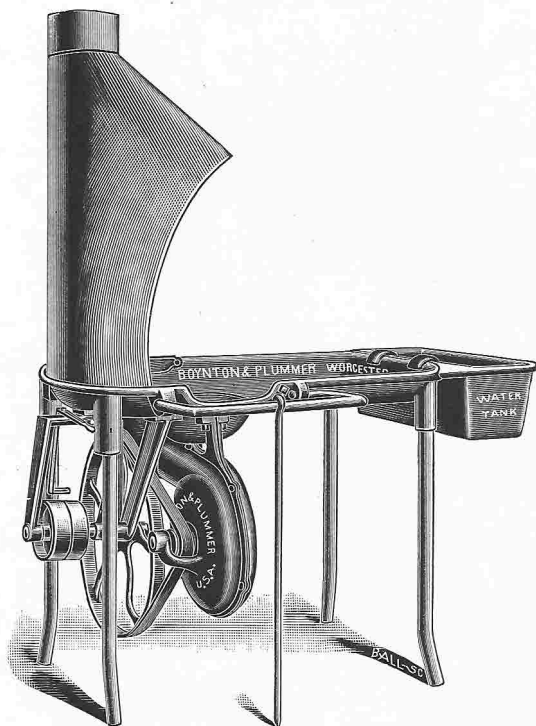
Telegraphic Code.

Trammwerk. With water tank,
Tramoseiro. Without water tank,

Price.

\$54.00
50.00

No. 1. POWER GEARED FORGE.



The above forge is desirable in shops, where power is used, for heavy work. Has cut-off for regulating blast to any degree required. Tight and loose pulleys on forge should run about 200 turns per minute. Pulleys, 6x2 inches. Dimensions same as No. 0. It can be arranged for hand or power, sometimes desirable when power is not in use.

Weight, with tank, 325 pounds; without tank, 275 pounds. Packed for export, 40x36x32 inches, 350 pounds.

Telegraphic Code.

Price.

Tramoyista.	With water tank,	\$58.00
Tramoia.	Without water tank,	54.00
Tramox.	Hand attachment, extra,	4.00

Add x to code word for hand attachment when wanted for both hand and power.

No. 2. GEARED FORGE.

With Shield.



Our No. 2 forge is particularly suitable for boiler-makers, bridge-builders, railroad contractors, miners, etc., or on any out-door work where hood is not necessary to carry off the gas or smoke. Will produce welding heat on 3-inch iron in six minutes.

Height, 32 inches; hearth, $27\frac{1}{2} \times 21$ inches; fan, $10\frac{1}{2}$ inches; weight, 135 pounds; packed for export, $35 \times 31 \times 23$ inches, 175 pounds.

Telegraphic Code.

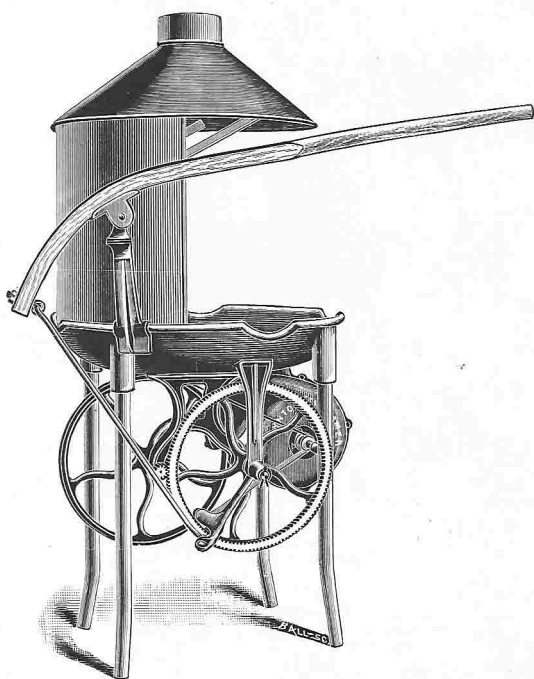
Tramojo.

Price.

\$36.00

No. 3. GEARED FORGE.

Half Open Hood.



The No. 3 forge is desirable for horseshoers, marble-workers and general repair-shops. Dimensions same as No. 2. Weight, 142 pounds; packed for export, 35x31x23 inches, 185 pounds.

Telegraphic Code.

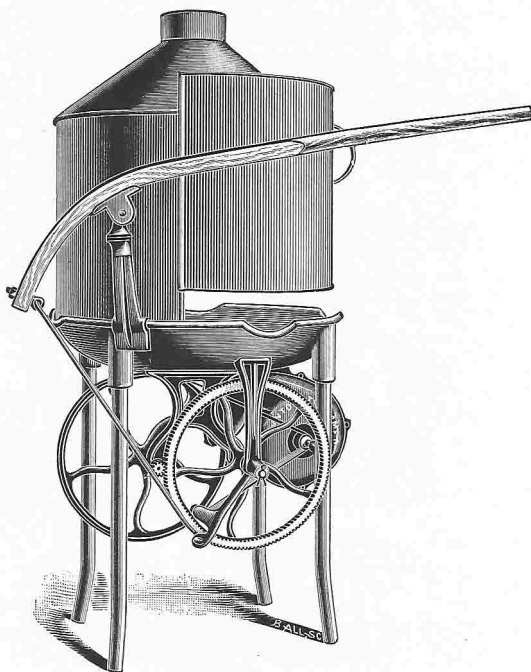
Tramontado.

Price.

\$40.00

No. 4. GEARED FORGE.

Closed Hood.



No. 4 is particularly adapted to machine shops, planing mills, saw mills, furniture factories, metal-refining works, etc., as closed hood prevents escape of sparks, smoke, or fumes. Dimensions same as No. 2. Weight, 145 pounds; packed for export, 59x31x23 inches, 200 pounds.

Telegraphic Code.

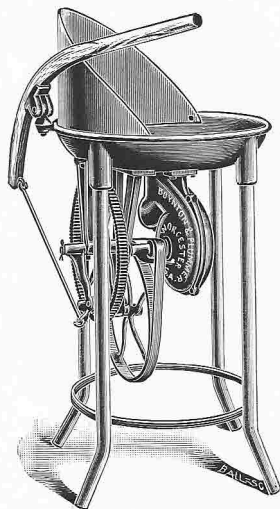
Tramontana.

Price.

\$42.00

No. 5. GEARED FORGE.

With Shield.



No. 5 is suitable for miners, tool-makers, boiler-makers, prospectors, bridge-builders, etc. Very handy for out-door work, being easily carried from place to place as may be required. Will make welding heat on $1\frac{1}{2}$ to 2-inch iron in five to ten minutes.

Nos. 5, 6 and 7 are so constructed as to have all the pulleys and fan inside of legs.

Height, 32 inches; hearth, 19 inches diameter; fan, $8\frac{1}{2}$ inches; weight, 75 pounds; packed for export, 36x21x20 inches, 100 pounds.

Telegraphic Code.

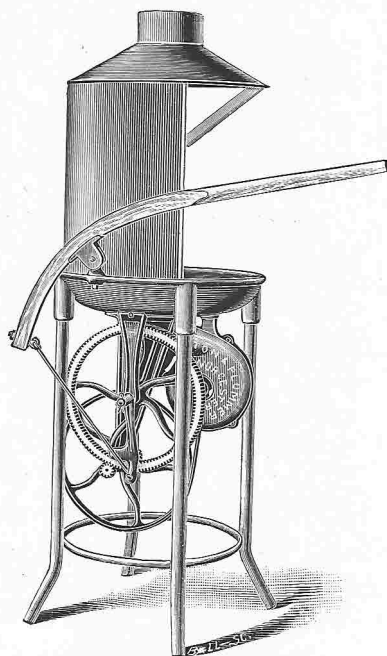
Price.

Tramortire.

\$24.00

No. 6. GEARED FORGE.

Half Open Hood.



Forge No. 6 is very suitable for tinsmiths, plumbers, locksmiths and small shops generally. Dimensions same as No. 5.

Weight, 80 pounds; packed for export, 36x21x20 inches, 105 pounds.

Telegraphic Code.

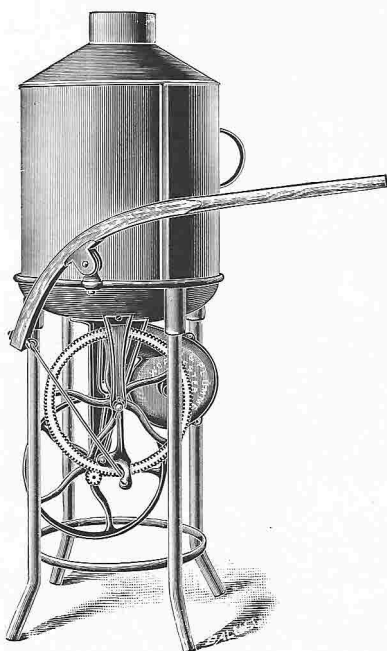
Tramortito.

Price.

\$27.00

No. 7. GEARED FORGE.

Closed Hood.



Forges with closed hoods are preferable in shops liable to damage by fire, or where subject to gas or odors, being suitable for jewelers, pattern-makers, planing mills, paper mills, etc. Dimensions same as No. 5.

Weight, 85 pounds; packed for export, 59x21x20 inches, 130 pounds.

Telegraphic Code.

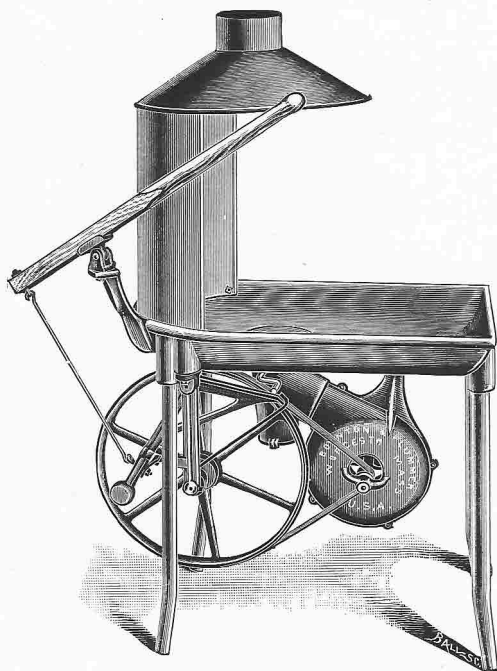
Tramortiva.

Price.

\$30.00

No. 8. CLUTCH FORGE.

With Half Open Hood.



The special feature in our clutch forge is the simplicity of its clutch; fewer pieces are used in it than any clutch made—being entirely free from a mass of traps, such as bolts and nuts, leathers, rubber balls, etc.; it is practically indestructible; particularly adapted to parties desiring a forge without noise, and where a geared forge would be undesirable.

Height, 32 inches; hearth, $33\frac{1}{2} \times 22$ inches; fan, 12 inches; weight, 200 pounds; packed for export, $39 \times 33 \times 24$ inches, 250 pounds.

Telegraphic Code.

Trampalare. With half-open hood,

Trampearon. With shield,

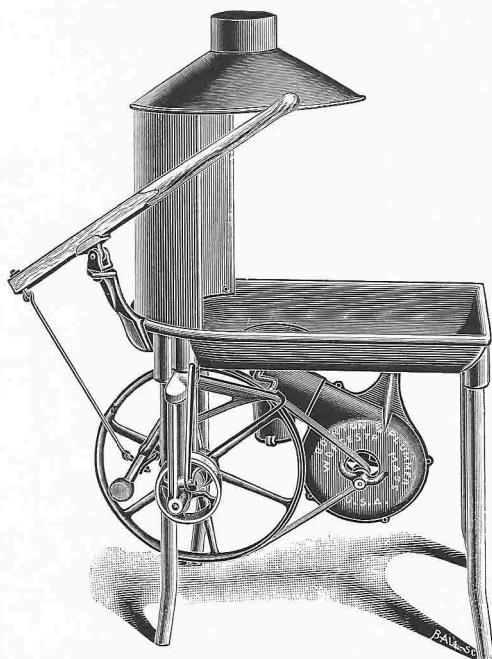
Price.

\$40.00

36.00

No. 9. POWER CLUTCH FORGE.

Half Open Hood.



The above illustration represents our clutch forge arranged for hand or power. It is run by one pulley only (clutch pulley). Pulley on machine should run about 200 turns per minute, and, when occasion requires it, can be changed to hand in a moment. Size of pulley, 6x2 inches. Dimensions same as No. 8.

Weight, 215 pounds; packed for export, 39x33x24 inches, 265 pounds.

Telegraphic Code.

Trampalava. For power only,
Trampilla. For hand and power,

Price.

\$44.00
48.00

No. 10. CLUTCH FORGE.

With Shield.



The above forge, being light and strong, is recommended to tank-builders, bridge-builders, railroad contractors—for outdoor work, or places where a hood is not necessary.

Height, 32 inches; hearth, $21\frac{1}{2}$ inches; fan, $10\frac{1}{2}$ inches; weight, 110 pounds; packed for export, 36x29x23 inches. 150 pounds.

Telegraphic Code.

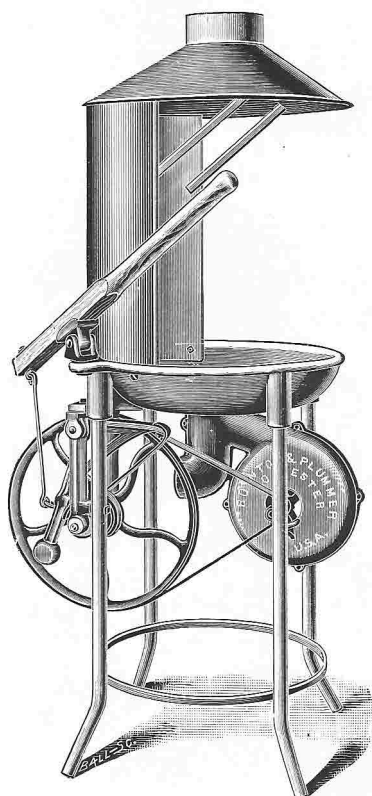
Trampao.

Price.

\$24.00

No. 11. CLUTCH FORGE.

With Half Open Hood.



This forge is suitable for such artisans as would use our No. 6 Geared Forge, but who prefer a forge without gears. Dimensions same as No. 10.

Weight, 115 pounds; packed for export, 36x29x23 inches, 165 pounds.

Telegraphic Code.

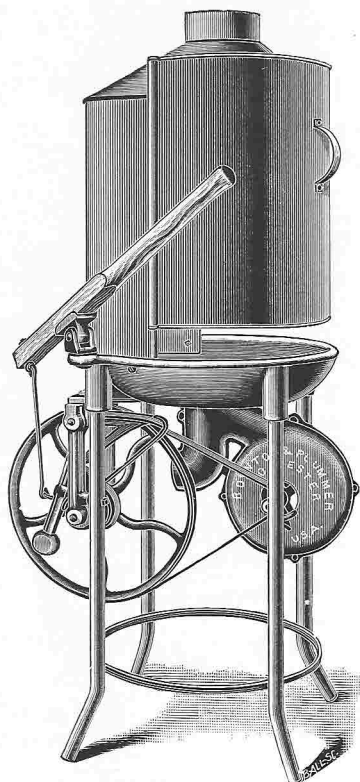
Trampeaba.

Price.

\$27.00

No. 12. CLUTCH FORGE.

Closed Hood.



Dimensions same as No. 10. Weight, 120 pounds; packed for export, 59x29x23 inches, 175 pounds.

Telegraphic Code.

Trampeadas.

Price.

\$30.00

No. 13. CLUTCH FORGE.



The No. 13 represents the No. 0, arranged with clutch movement instead of gear, and is intended for places where a geared forge would be undesirable on account of the extra noise.

Hearth, 38x26 inches; fan, 14 inches; height, 32 inches; weight, 250 pounds; packed for export, 40x36x32 inches, 350 pounds.

Telegraphic Code.

Trampeador. Without water tank,
Trampista. With water tank,

Price.

\$50.00

54.00

No. 14. BARREL FORGE.



This forge is especially intended for out-door work for bridge and railroad builders.

Height, 29 inches; hearth, 19 inches; fan, $8\frac{1}{2}$ inches; weight, 80 pounds; packed for export, 36x21x21 inches, 105 pounds.

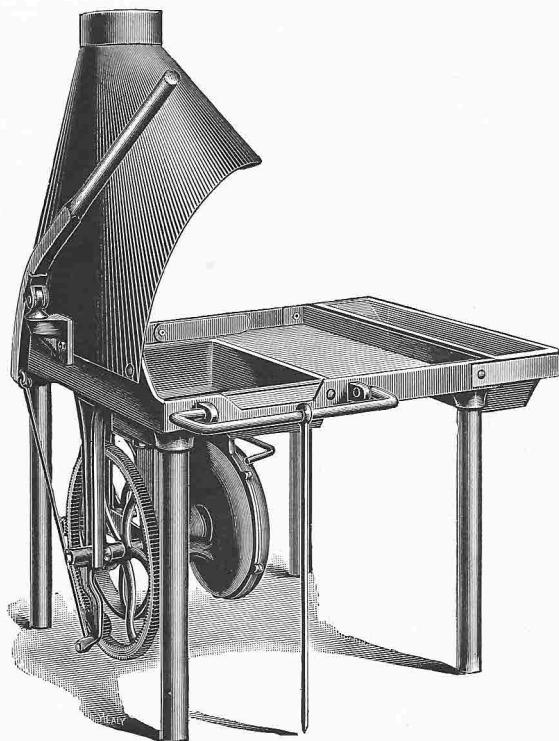
Telegraphic Code.

Trampeamos.

Price.

\$32.00

No. 15. GEARED FORGE.



The above is designed especially to take the place of the brick forge in shops where extra heavy work is required.

Size of fire-pot, 17x22x4½ inches deep; diameter of fan, 14 inches; dimensions with water tank, 36x44 inches; without water tank, 36x36 inches; height, 32 inches; weight, 480 pounds; packed for export, 38x38x34 inches, 520 pounds.

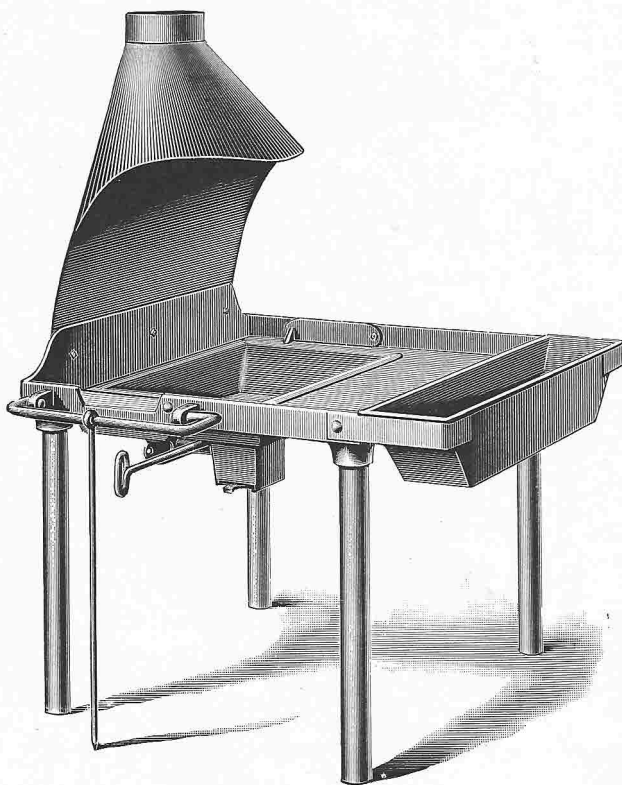
Telegraphic Code.

Price.

Trampeando.	Without water tank,	\$70.00
Tramples.	With water tank,	75.00
Tramplay.	Power attachment, extra,	4.00

Add y to code word when wanted for both hand and power.

No. 16. STATIONARY FORGE.



The No. 16 is arranged for taking the blast from blower, with pipe connection. Has Ball tuyere iron, with gate or shut-off in pipe connection. Dimensions same as No. 15.

Weight, 375 pounds; packed for export, 38x38x34 inches, 415 pounds.

Telegraphic Code.

Trampolina. With hood,

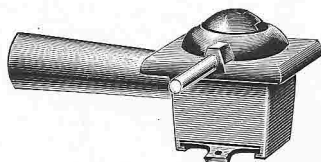
Tramposo. Without hood,

Price.

\$60.00

55.00

No. 1. TUYERE IRON.



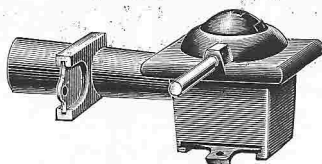
Telegraphic Code.

Tranatamus. Ball Tuyere Iron,

Price.

\$6.00

No. 2. TUYERE IRON.



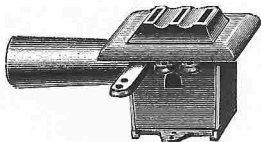
Telegraphic Code.

Tranataret. Ball Tuyere Iron, with shut-off or gate
for forges having power blast,

Price.

\$7.00

No. 3. TUYERE IRON.



Telegraphic Code.

Tranation. Tuyere Iron, with three slide openings
to regulate blast,

Price.

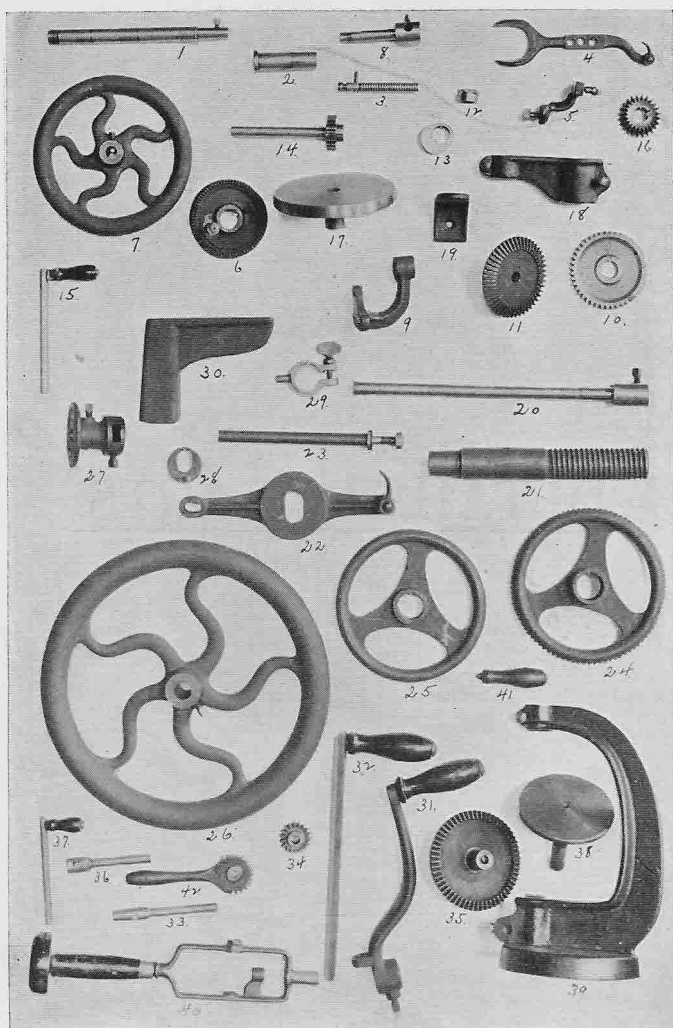
\$8.00



DETAILED PARTS.



UPRIGHT DRILL, No. 0.
HORIZONTAL DRILLS, Nos. 2-4-5.
COMBINED BREAST and UPRIGHT DRILL.



When ordering, give number or name of part and number of drill it is for.

For description, see next page.

UPRIGHT DRILL, No. 0. HORIZONTAL DRILLS, Nos. 2-4-5. COMBINED BREAST & UPRIGHT DRILL.

No. 0 DRILL.

Code Word.	No.	Name of Part.	Price.	Code Word.	No.	Name of Part.	Price.
Aback	..	Post, not ill'd	\$1.00	Abbey	10	Large Spur Gear	\$1.40
Abacus	..	Frame, not ill'd	3.00	Abbot	11	Side Gear	1.40
Abaft	1	Spindle	1.40	Abduce	12	Brass Nut	.65
Abandon	2	Feed Nut	.65	Abduct	13	Eccentric	.40
Abase	3	Feed Screw	.65	Abed	14	Spur Gear and Shaft	1.00
Abash	4	Feed Lever	.40	Abettor	15	Crank	.65
Abate	5	Feed Bracket	.40	Abhor	16	Spindle Gear	.65
Abatis	6	Feed Wheel	.65	Abid	17	Table	.65
Abba	7	Balance Wheel	.65	Abide	18	Table Rest	.80
Abbacy	8	Crank Head and Shaft	.40	Ability	19	Post Bracket	.40
Abbyss	9	Side Arm	.80				

COMBINED BREAST AND UPRIGHT DRILL.

Absolute	33	Spindle	\$1.00	Abstinent	38	Table	\$1.00
Absolve	34	Spindle Gear	.65	Abstract	39	Stand	1.40
Absorb	35	Side Gear	1.00	Abstruse	40	Frame	1.40
Abstain	36	Side Shaft	1.00	Absurd	41	Side Handle	.15
Absterge	37	Crank	.40	Absurdity	42	Table Lever	.30

No. 2 HORIZONTAL DRILL.

Abet	..	Frame, not ill'd	\$2.60	Aby	26	Balance Wheel	\$2.00
Abject	20	Spindle	1.00	Aboard	27	Crank Head	.40
Abjure	21	Feed Screw	1.40	Abode	28	Eccentric	.20
Ablative	22	Feed Lever and Pawl	.65	Abolish	30	Drill Rest	.65
Able	23	Guide Rod	.60	Abominate	32	Crank	.65
Ablution	24	Feed Wheel	.65				

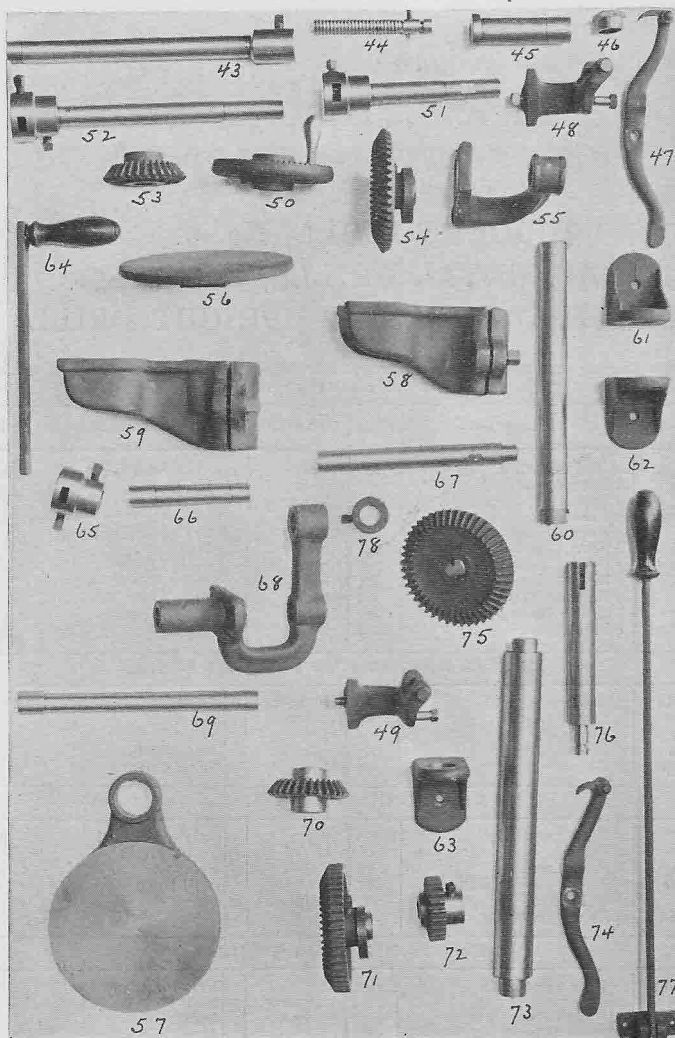
No. 4 HORIZONTAL DRILL.

Abominable	..	Frame, not ill'd	\$2.40	Abrade	29	Friction Strap	\$.60
Abound	20	Spindle	1.00	Abrasion	30	Drill Rest	.80
About	21	Feed Screw	1.40	Abreast	31	Crank	1.00
Above	25	Feed Wheel	.65				

No. 5 HORIZONTAL DRILL.

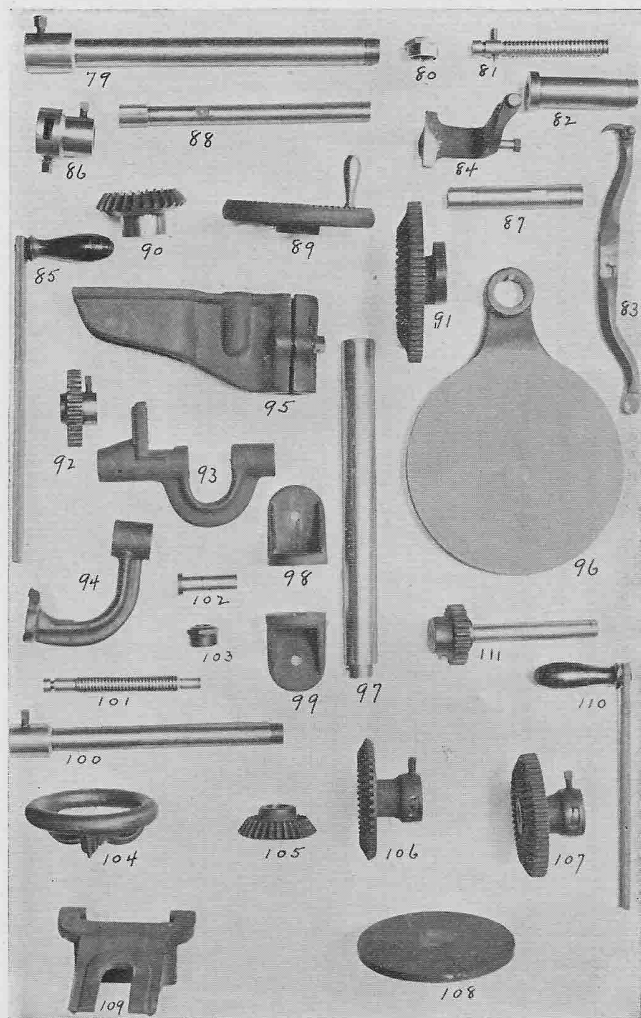
Abridgment	..	Frame, not ill'd	\$4.00	Abscess	26	Balance Wheel	\$2.00
Abridge	20	Spindle	1.60	Abscind	27	Crank Head	.65
Abroach	21	Feed Screw	1.60	Abscond	28	Eccentric	.40
Abroad	22	Feed Lever and Pawl	.65	Absence	30	Drill Rest	1.00
Abrogate	23	Guide Rod	.60	Absent	32	Crank	.65
Abrupt	24	Feed Wheel	1.00				

UPRIGHT DRILLS Nos. 1-1 $\frac{1}{2}$ -5-6-12.



Code Word.	⊘	Name of Part.	Price.	Code Word.	⊘	Name of Part.	Price.
Abundance	..	Balance Wheel, not ill'd	\$2.00	Accrue	57	Table	\$1.40
Abundant	..	Wood Post, No. 1, "	1.00	Accurate	58	Table Rest, Nos. 1-6-12	1.40
Abuse	..	Wood Post, No. 1 $\frac{1}{2}$, "	1.00	Accurse	59	Table Rest, Nos. 1 $\frac{1}{2}$ -5	1.40
Abusive	..	Wood Post, No. 12, "	1.00	Accusant	60	Table Post, Nos. 1-6-12	1.10
Abut	..	Iron Post, No. 5, "	3.00	Accuse	61	Post Bracket, upper	.40
Abuttal	..	Iron Post, No. 6, "	3.00	Accustom	62	Post Bracket, lower	.40
Abyss	..	Frame, Nos. 1-6-12, "	3.60	Ace	63	Post Bracket, Nos. 1 $\frac{1}{2}$ -5	.40
Academy	..	Frame, Nos. 1 $\frac{1}{2}$ -5, "	3.60	Acetest	64	Crank	.65
Accede	43	Spindle	2.80	Acetify	65	Handle Head	.65
Accent	44	Feed Screw	.65	Acetous	66	Side Shaft	.65
Accept	45	Feed Nut	.65	Ache	67	Side Shaft, Power	.80
Access	46	Brass Nut	.80	Achieve	68	Side Stand	1.40
Accident	47	Feed Lever and Pawl, Nos. 1-6	.65	Aching	69	Power Shaft	1.00
Acclaim	48	Feed Bracket, Nos. 1-6	.65	Acid	70	Spindle Gear	1.00
Accord	49	Feed Bracket, Nos. 1 $\frac{1}{2}$ -5	.65	Acidify	71	Side Gear	1.40
Accost	50	Feed Wheel	.65	Acme	72	Spur Gear	1.00
Account	51	Handle Head and Shaft	1.40	Acorn	73	Table Post, Nos. 1 $\frac{1}{2}$ -5	1.40
Accouple	52	Handle Head and Shaft, Power	1.60	Acoustic	74	Feed Lever and Pawl, Nos. 1 $\frac{1}{2}$ -5	.65
Accouter	53	Spindle Gear	1.00	Acquaint	75	Side Gear	1.00
Accredit	54	Side Gear	1.00	Acquire	76	Feed Bar	1.00
Accretion	55	Side Arm	1.00	Acquit	77	Lever	1.00
Accretive	56	Table	1.00	Acquittal	78	Collar	.40

UPRIGHT DRILLS, Nos. 2-7-8-9.



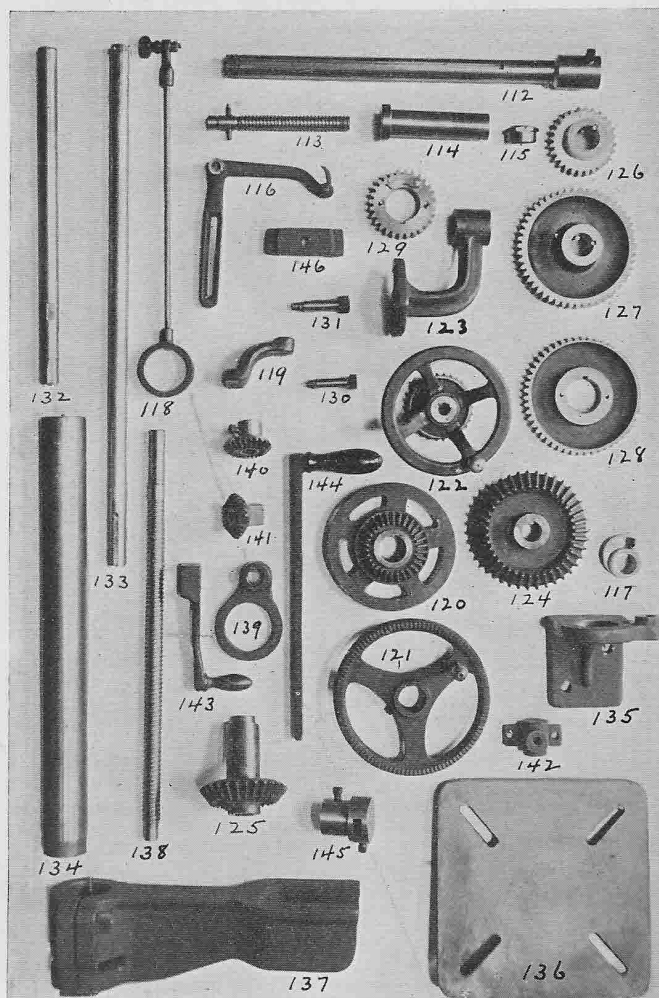
Nos. 2-7 DRILLS.

Code Word.	No.	Name of Part.	Price.	Code Word.	No.	Name of Part.	Price.
Acce	79	Spindle	3.00	Actu	88	Shaft	\$1.40
Acrid	80	Brass Nut	.80	Actuate	89	Feed Wheel	.65
Acritude	81	Feed Screw	.65	Acumen	90	Spindle Gear	1.00
Acrobat	82	Feed Nut	.65	Acute	91	Side Gear	2.00
Across	83	Feed Lever	.65	Adage	92	Spur Gear	.65
Acrostic	84	Feed Bracket	.65	Adagio	93	Balance Wheel Box	1.10
Act	85	Crank	.65	Adamant	94	Side Arm	1.10
Acting	86	Handle Head	.65	Adamic	95	Table Rest	1.40
Action	87	Side Stud	.65	Adapt	96	Table	1.60
Active				Add	97	Table Post	1.40
Actor				Adder	98	Post Bracket, upper	.40
Actress				Addible	99	Post Bracket, lower	.40
Actual							

Nos. 8-9 DRILLS.

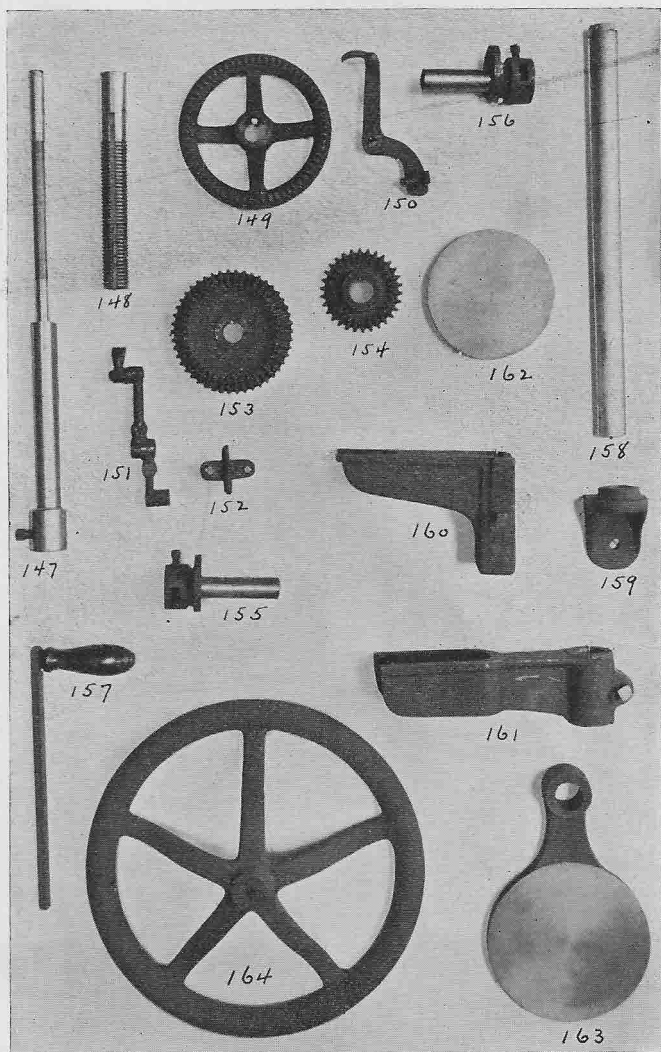
Addict	...	Frame, No. 8,	not ill'd	\$3.00	Adipose	105	Spindle Gear	\$.65
Addle	...	Frame, No. 9,	"	3.00	Adit	106	Side Gear	.65
Address	100	Spindle		2.00	Adjacent	107	Side Gear	1.00
Adduce	101	Feed Screw		.65	Adjoin	108	Table	.60
Adept	102	Feed Nut		.65	Adjourn	109	Table Rest	.60
Adhere	103	Connecting Nut		.60	Adjudge	110	Crank	.65
Adieu	104	Feed Wheel		.60	Adjunct	111	Spur Gear and Shaft	1.00

IMPROVED UPRIGHT DRILLS, Nos. 3-II.



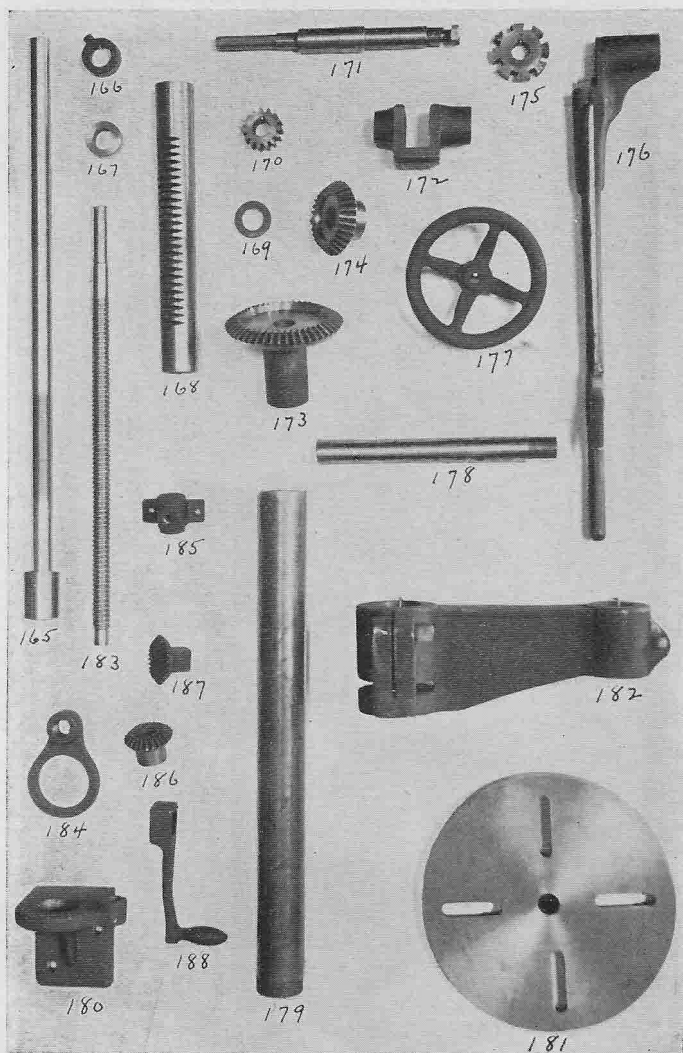
Code Word.	No.	Name of Part.	Price.	Code Word.	No.	Name of Part.	Price.
Adjure	...	Wood Post, No. 3, not ill'd	\$2.00	Adust	127	Large Hub Gear	2.60
Adjust	...	Iron Post, No. 11, "	6.00	Advance	128	Large Flat Gear	2.60
Adjutant	...	Frame, "	8.00	Advent	129	Small Latch Gear	2.00
Adjuvant	...	Balance Wheel, "	2.40	Adverb	130	Raise and Fall Stud	.25
Admixture	...	Tight and Loose Pulleys, not ill'd, per pair	2.60	Adverse	131	Hand Wheel Stud	.30
Admiral	112	Spindle	2.60	Advert	132	Side Shaft	1.40
Admire	113	Feed Screw	.80	Advice	133	Balance Wheel Shaft	2.00
Admit	114	Feed Nut	.65	Advocate	134	Table Post	2.60
Admix	115	Brass Connecting Nut	.80	Adytum	135	Post Bracket	.80
Admonish	116	Feed Lever and Pawl	1.00	Adze	136	Table	1.80
Adnate	117	Eccentric	1.40	Aeolian	137	Table Rest	2.00
Ado	118	Eccentric Strap, Rod and Connection	1.40	Aerial	138	Raise and Fall Screw	1.40
Adopt	119	Feed Bracket	.50	Aerify	139	Raise and Fall Nut	.50
Adoption	120	Feed Wheel	1.00	Aerolite	140	Raise and Fall Top Gear	.65
Adore	121	Feed Wheel (old style)	.65	Aeronaut	141	Raise and Fall Crank Gear	.65
Adorn	122	Hand Wheel and Gear	1.40	Afar	142	Raise and Fall Box	.35
Adrift	123	Side Arm	1.00	Afeard	143	Raise and Fall Crank	.65
Adroit	124	Side Gear	1.40	Affable	144	Crank	.65
Adry	125	Long Hub Bevel Gear	2.00	Affair	145	Crank Head	.65
Adult	126	Small Hub Gear	2.00	Affect	146	Table Clamp	.15

UPRIGHT DRILLS, Nos. 10-22.



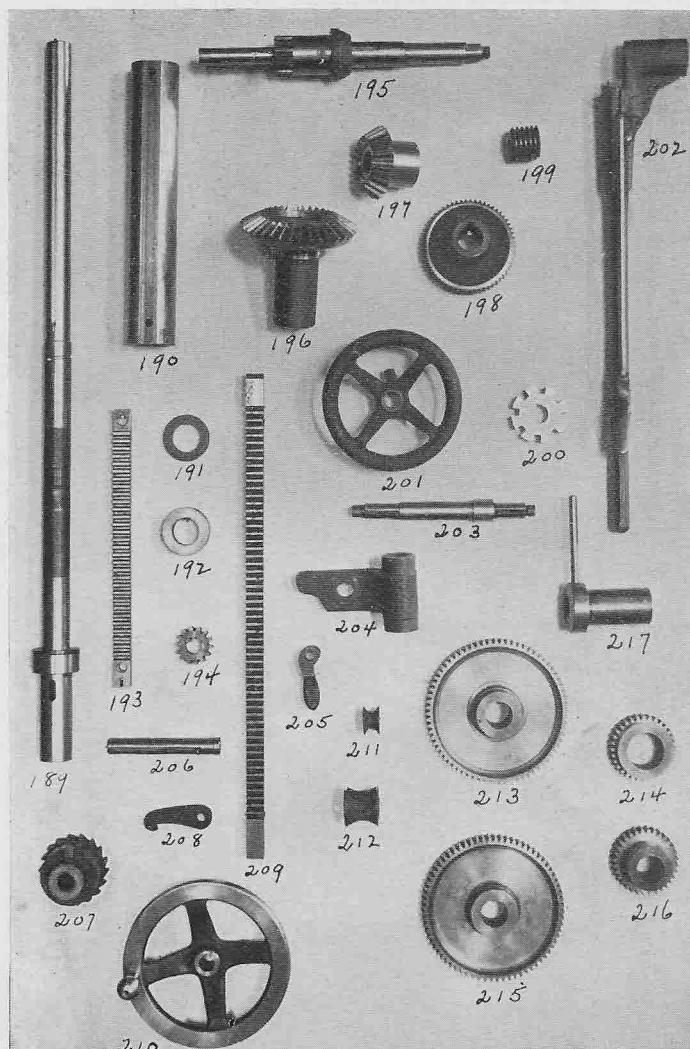
Code Word.	No.	Name of Part.	Price.	Code Word.	No.	Name of Part.	Price.
Affiant	...	Wood Post, No. 22, not illustrated	\$1.00	Afield	154	Small Bevel Gear	.80
Affirm	...	Frame, No. 10, not ill'd	3.00	Afloat	155	Crank Head and Shaft	.65
Affix	...	Frame, No. 22, not ill'd	2.80	Afoot	156	Crank Head and Shaft	.65
Afflict	147	Spindle	2.60	Afore	157	Crank	.65
Afflux	148	Feed Screw	1.00	Afraid	158	Table Post	1.40
Afford	149	Feed Wheel	.65	Aft	159	Post Bracket	.40
Affray	150	Feed Lever and Pawl	.65	Aft	160	Table Rest	.65
Affright	151	Feed Lever and Pawl	.65	After	161	Table Rest	1.40
Affront	152	Feed Bracket	.40	Again	162	Table	.50
Affuse	153	Large Bevel Gear	1.00	Agape	163	Swing Table	1.40
				Agate	164	Balance Wheel	1.80

UPRIGHT POWER DRILL, No. 13.



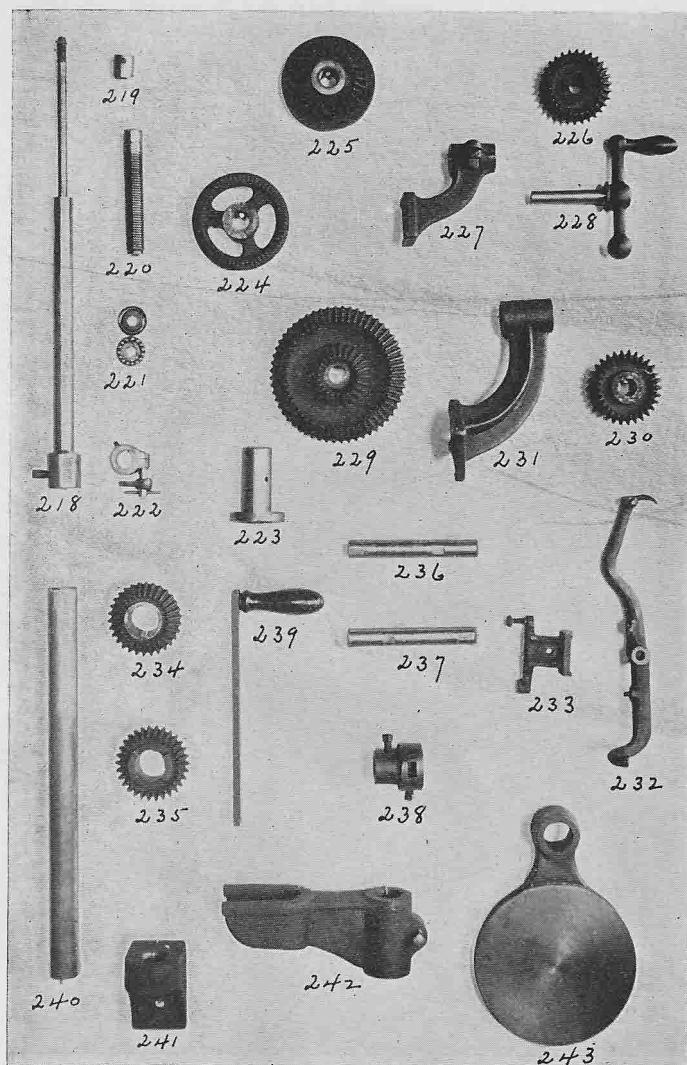
Code Word.	№	Name of Part.	Price.	Code Word.	№	Name of Part.	Price.
Agave	...	Iron Post, not ill'd	\$6.00	Agonize	175	Sprocket	\$1.00
Age	...	Frame, "	9.00	Agony	176	Lever, Rod and Latch	2.60
Agency	...	Cone Pulley, "	2.60	Agree	177	Hand Wheel	.65
Agent	...	Countershaft, "	11.00	Aground	178	Cone Shaft	1.60
Aggress	165	Spindle	4.00	Ague	179	Table Post	2.60
Aggroupp	166	Shaft Collar	.20	Ahead	180	Post Bracket	.75
Aghast	167	Spindle Collar	.35	Aid	181	Table	2.60
Agile	168	Spindle Sleeve	3.60	Aimless	182	Table Rest	2.60
Agility	169	Fibre Washer	.15	Airily	183	Raise and Fall Screw	1.40
Agitate	170	Pinion Gear	.65	Airing	184	Raise and Fall Nut	.50
Aglet	171	Side Shaft	1.60	Airless	185	Raise and Fall Box	.35
Aquail	172	Pinion Box	1.40	Aisle	186	Raise and Fall Top Gear	.65
Agog	173	Large Bevel Gear	2.00	Ajar	187	Raise & Fall Crank Gear	.65
Agoing	174	Small Bevel Gear	1.40	Akimbo	188	Raise and Fall Crank	.65

UPRIGHT DRILLS, Nos. 14-15-16.



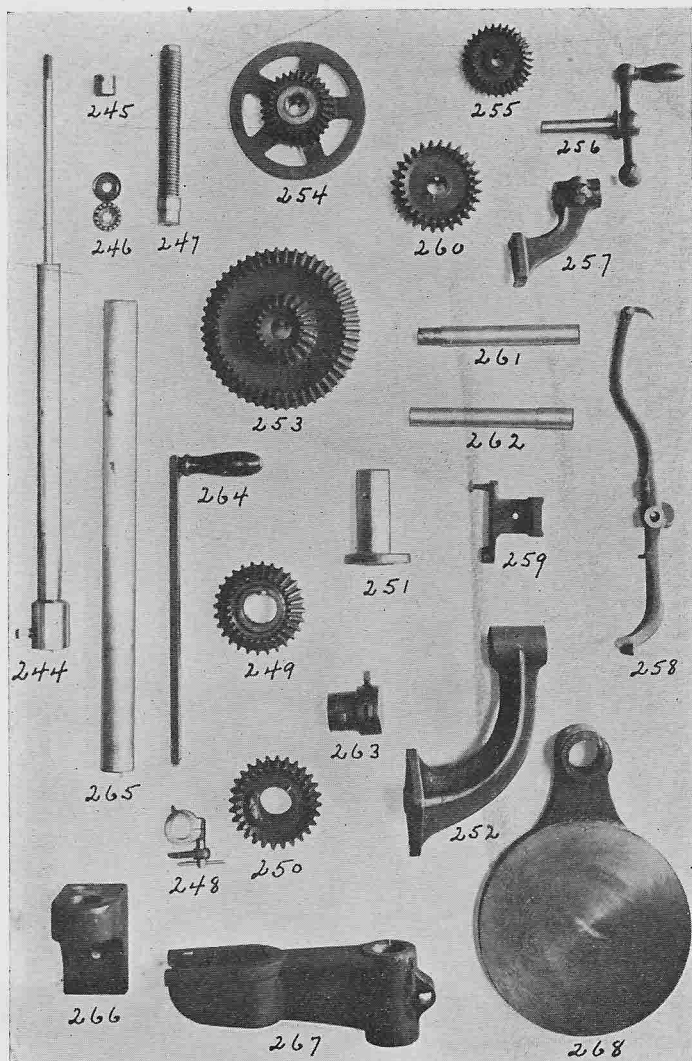
Code Word.	Size	Name of Part.	Price.	Code Word.	Size	Name of Part.	Price.
Airhole	...	Frame, No. 14, not ill'd	\$26.00	Alert	200	Sprocket	\$1.00
Ariness	...	Frame, No. 15, not ill'd	22.00	Algebra	201	Hand Wheel	.65
Akin	...	Frame, No. 16, not ill'd	26.00	Alias	202	Lever, Rod and Latch	2.80
Alack	...	Cone Pulley, not ill'd	6.00	Alibi	203	Screw Feed Shaft	1.00
Alamode	...	Countershaft, not ill'd	13.50	Alien	204	Screw Feed Bracket	1.00
Alacrity	...	Table, not ill'd	6.00	Alienate	205	Screw Feed Latch	.65
Alackaday	...	Table Rest, not ill'd	8.00	Alight	206	Raise and Fall Stud	.65
Alarm	189	Spindle	12.00	Alike	207	Raise and Fall Ratchet	.65
Alas	190	Spindle Sleeve	2.40	Aliment	208	Pawl	.35
Albeit	191	Fibre Washer	.15	Alimony	209	Raise and Fall Rack	2.00
Albino	192	Spindle Collar	.65	Aliquant	210	Feed Wheel	2.00
Album	193	Spindle Rack	2.00	Aliquot	211	Small Chain Pulley	.15
Albumen	194	Raise and Fall Gear	.65	Alive	212	Large Chain Pulley	.35
Alcaid	195	Lever Shaft and Gear	2.00	Alkali	213	Large Top Shaft Gear	2.80
Alchemy	196	Large Bevel Gear	4.00	Allay	214	Cone Gear	1.40
Alcoran	197	Small Bevel Gear	2.40	Allege	215	Large Rack Shaft Gear	2.80
Alcove	198	Worm Gear	3.60	Allegro	216	Small Rack Shaft Gear	1.40
Alder	199	Worm	1.60	Alleviate	217	Eccentric Quill	1.40

UPRIGHT DRILLS, Nos. 17-18.



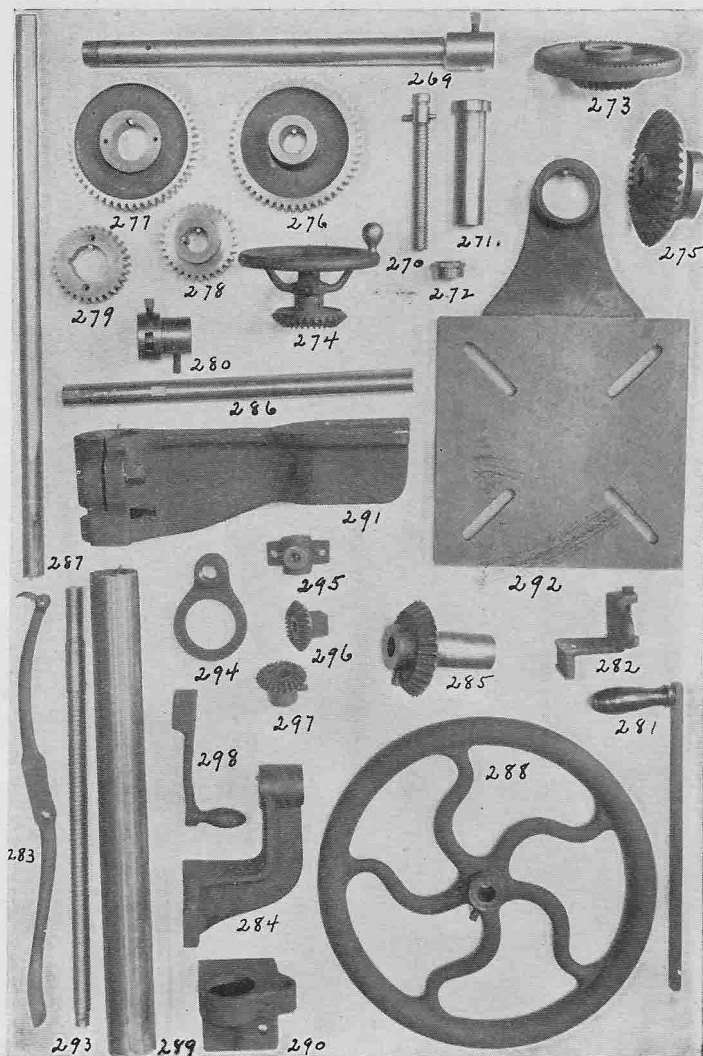
Code Word.	21	Name of Part.	Price.	Code Word.	22	Name of Part.	Price.
Alley	...	Wood Post, not ill'd	\$1.40	Alluvial	230	Balance Wheel Gear	\$0.65
Alligate	...	Frame, not ill'd	4.80	Alluvium	231	Side Arm	1.00
Alligator	...	Balance Wheel, not ill'd	2.00	Ally	232	Feed Lever	1.00
Allision	218	Spindle	3.40	Almanac	233	Feed Bracket	.65
Allodial	219	Spindle Collar	.65	Almond	234	Top Clutch Gear	1.00
Allodium	220	Feed Screw	1.00	Almoner	235	Bottom Clutch Gear	1.00
Allot	221	Ball Bearings	1.40	Almonry	236	Side Shaft	.65
Allow	222	Friction Strap	.50	Almost	237	Balance Wheel Shaft	.65
Alloy	223	Eccentric	1.00	Alms	238	Crank Head	.65
Alloyage	224	Feed Wheel	1.00	Aloe	239	Crank	.65
Allude	225	Feed Wheel	1.40	Aloetic	240	Table Post	1.40
Allure	226	Feed Gear	.65	Aloft	241	Post Bracket	.65
Alluring	227	Feed Arm	.65	Alone	242	Table Rest	1.40
Allusion	228	Feed Crank	.65	Along	243	Table	1.40
Allusive	229	Side Gear	1.40				

UPRIGHT DRILL, No. 19.



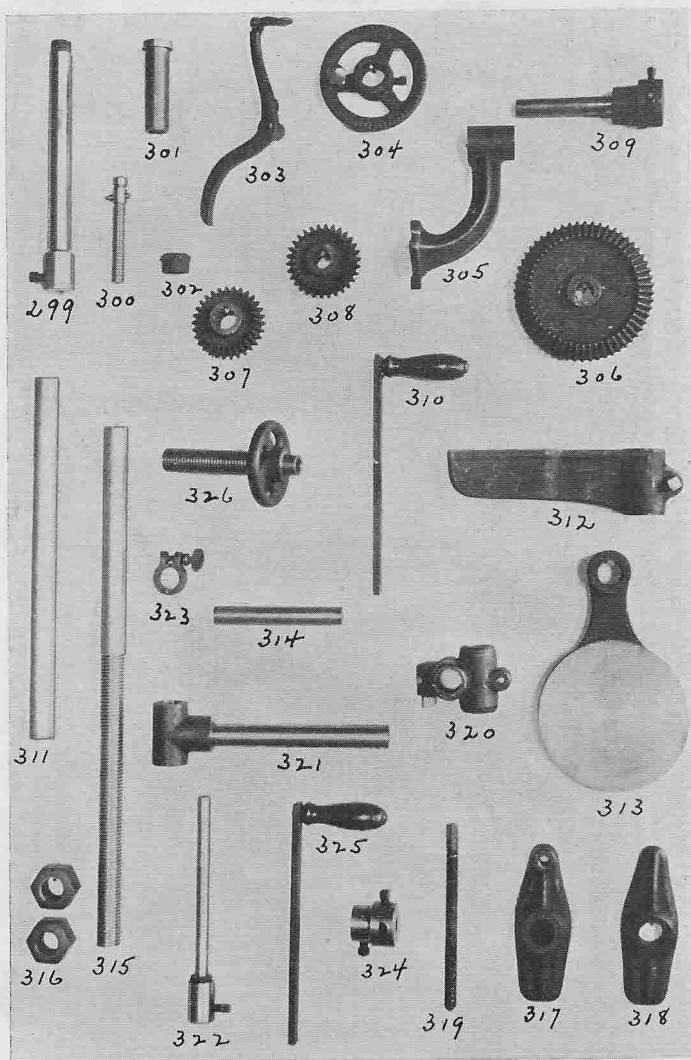
Code Word.	N ^o .	Name of Part.	Price.	Code Word.	N ^o .	Name of Part.	Price.
Alroof	...	Wood Post, not ill'd	\$1.40	Altitude	255	Feed Gear	\$.65
Aloud	...	Frame, not ill'd	4.80	Alto	256	Feed Crank	.65
Alpaca	...	Balance Wheel, not ill'd	2.00	Aludel	257	Feed Arm	.65
Alpha	244	Spindle	3.40	Alum	258	Feed Lever	1.00
Alphabet	245	Spindle Collar	.65	Alumine	259	Feed Bracket	.65
Alpine	246	Ball Bearings	1.40	Alumnus	260	Balance Wheel Gear	.65
Already	247	Feed Screw	1.20	Alvine	261	Side Shaft	.65
Also	248	Friction Strap	.50	Alway	262	Balance Wheel Shaft	.65
Alter	249	Top Clutch Gear	1.20	Amain	263	Crank Head	.65
Alterant	250	Bottom Clutch Gear	1.20	Amalgam	264	Crank	.65
Altercate	251	Eccentric	1.40	Amaranth	265	Table Post	1.60
Alternate	252	Side Arm	1.40	Amass	266	Post Bracket	.65
Althea	253	Side Gear	1.40	Amateur	267	Table Rest	1.60
Although	254	Feed Wheel	1.60	Amatory	268	Table	1.80

UPRIGHT DRILL, No. 20.



Code Word.	$\frac{c}{2}$	Name of Part.	Price.	Code Word.	$\frac{c}{2}$	Name of Part.	Price.
Amaze	...	Wood Post, not ill'd	\$2.00	Amiable	283	Feed Lever and Pawl	\$0.65
Amazing	...	Frame, not ill'd	8.00	Amiably	284	Side Arm	1.00
Amazon	269	Spindle	3.40	Amicable	285	Long Hub Bevel Gear	2.00
Amber	270	Feed Screw	.80	Amid	286	Side Shaft	1.40
Ambient	271	Feed Nut	.65	Amidst	287	Balance Wheel Shaft	2.00
Ambit	272	Brass Nut	.80	Amiss	288	Balance Wheel	2.40
Ambition	273	Feed Wheel	1.00	Amity	289	Table Post	2.60
Amble	274	Hand Wheel and Gear	1.40	Amnesty	290	Post Bracket	1.00
Ambler	275	Side Gear	1.40	Among	291	Table Rest	2.00
Ambry	276	Large Hub Gear	2.00	Amount	292	Table	1.80
Ambpace	277	Large Flat Gear	2.60	Amour	293	Raise and Fall Screw	1.40
Ambush	278	Small Hub Gear	2.00	Ample	294	Raise and Fall Nut	.50
Amend	279	Small Flat Gear	2.00	Amplify	295	Raise and Fall Box	.65
Amenity	280	Crank Head	.65	Amply	296	Raise & Fall Crank Gear	.65
Amercer	281	Crank	.65	Amputate	297	Raise & Fall Top Gear	.65
Amethyst	282	Feed Bracket	.50	Amulet	298	Raise and Fall Crank	.65

UPRIGHT DRILL, No. 21. SWIVEL CLAMP DRILL, No. 1.

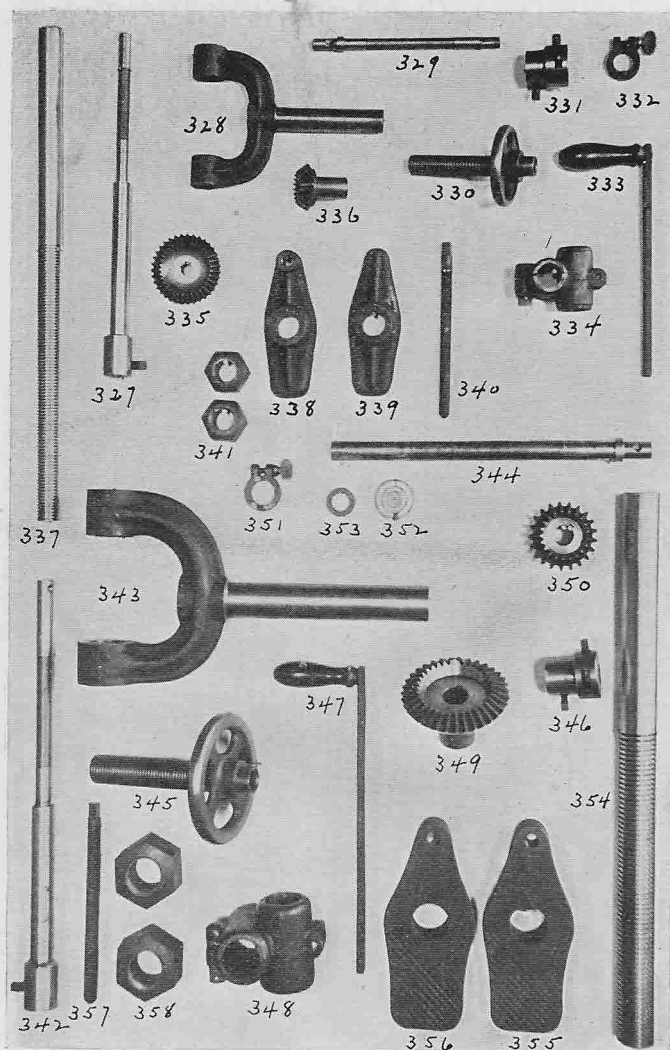


Code Word.	¢	Name of Part.	Price.	Code Word.	¢	Name of Part.	Price.
Amuse	...	Frame, not ill'd	\$5.40	Analyze	306	Side Gear	\$1.00
Amusing	...	Balance Wheel, not ill'd	2.00	Anapest	307	Spindle Gear	.65
Amusive	299	Spindle	2.80	Anarchy	308	Balance Wheel Gear	.65
Anagram	300	Feed Screw	.65	Anatomist	309	Crank Head and Shaft	1.00
Analogize	301	Feed Nut	.65	Anatomy	310	Crank	.65
Analogy	302	Connecting Nut	.60	Anbury	311	Table Post	1.40
Analysis	303	Feed Lever and Pawl	.65	Ancestor	312	Table Rest	1.00
Analyst	304	Feed Wheel	.65	Ancestral	313	Table	1.00
Analytic	305	Side Arm	1.00	Ancestry	314	Balance Wheel Shaft	.40

No. 1 SWIVEL CLAMP DRILL.

Anchor	315	Post	\$3.20	Andiron	321	Spindle Frame	\$2.00
Anchoret	316	Clamp Nuts, each	.65	Anecdote	322	Spindle	1.00
Anchovy	317	Upper Clamp	1.00	Anemone	323	Friction Strap	.65
Ancient	318	Lower Clamp	.65	Anenurism	324	Crank Head	.65
Ancillary	319	Clamp Screw	.40	Anew	325	Crank	.65
Andante	320	Swivel	2.00	Angel	326	Feed Screw and Wheel	2.40

SWIVEL CLAMP DRILLS, Nos. 2-4.



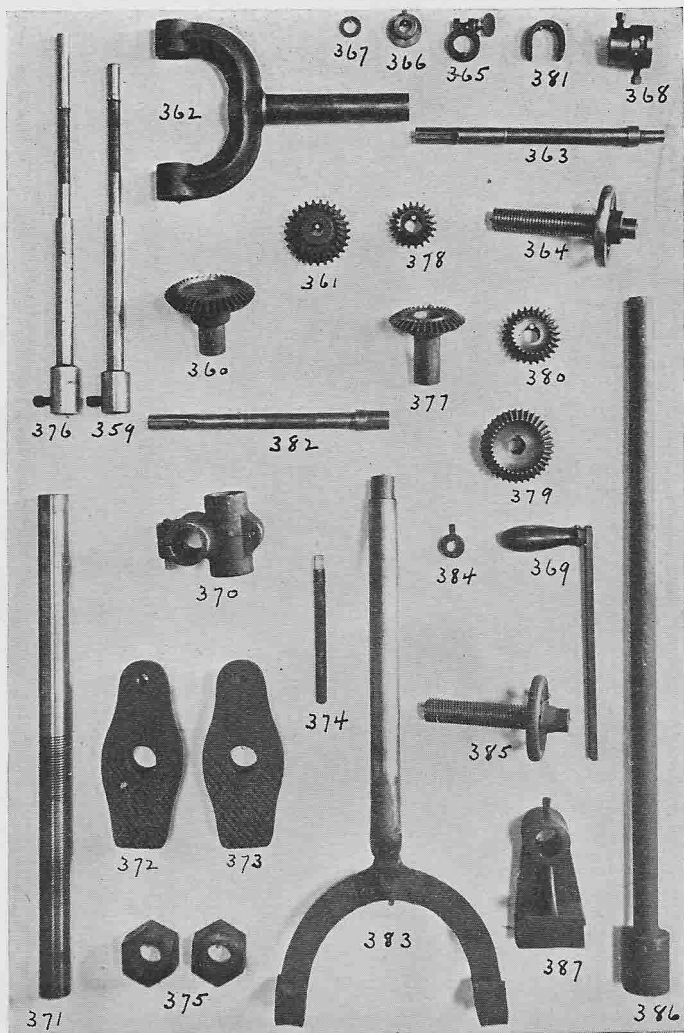
No. 2 SWIVEL CLAMP DRILL.

Code Word.	⌀	Name of Part.	Price.	Code Word.	⌀	Name of Part.	Price.
Angelic	327	Spindle	\$2.80	Anguish	335	Large Gear	\$1.00
Anger	328	Frame	4.40	Anile	336	Small Gear	1.00
Angina	329	Shaft	1.00	Anility	337	Post	3.20
Angle	330	Feed Screw and Wheel	2.40	Animal	338	Upper Clamp	1.00
Anglican	331	Crank Head	.65	Animate	339	Lower Clamp	.65
Angling	332	Friction Strap	.65	Animator	340	Clamp Screw	.40
Angrily	333	Crank	.65	Anise	341	Clamp Nuts, each	.65
Angry	334	Swivel	2.00				

No. 4 SWIVEL CLAMP DRILL.

Ankle	342	Spindle	\$3.00	Annual	351	Friction Strap	\$0.65
Annals	343	Frame	7.40	Annul	352	Friction Collar	.40
Anneal	344	Shaft	1.60	Annular	353	Washer	.20
Annex	345	Feed Screw and Wheel	3.20	Annulet	354	Post	5.40
Annona	346	Crank Head	.65	Annulose	355	Upper Clamp	1.40
Annotate	347	Crank	.65	Anodyne	356	Lower Clamp	1.00
Annotto	348	Swivel	2.60	Anoint	357	Clamp Screw	.40
Announce	349	Large Gear	2.40	Anointed	358	Clamp Nuts, each	.80
Annoy	350	Small Gear	1.40				

SWIVEL CLAMP DRILL, No. 3. RAILROAD TRACK DRILL, No. 1.



No. 3 SWIVEL CLAMP DRILL. SINGLE GEARED.

Code Word.	£ ¢	Name of Part.	Price.	Code Word.	£ ¢	Name of Part.	Price.
Anonaly	359	Spindle	\$2.60	Antelope	368	Crank Head	\$0.65
Anon	360	Spindle Gear	1.60	Antenna	369	Crank	.65
Anorexy	361	Side Gear	1.00	Antepast	370	Swivel	2.40
Another	362	Frame	5.65	Anterior	371	Post	4.00
Anserine	363	Shaft	1.40	Anterroom	372	Upper Clamp	.65
Answer	364	Feed Screw and Wheel	2.60	Anthem	373	Lower Clamp	.65
Ant	365	Friction Strap	.65	Anther	374	Clamp Screw	.40
Antalgic	366	Friction Collar	.40	Anthracite	375	Clamp Nuts, each	.65
Antedate	367	Washer	.20				

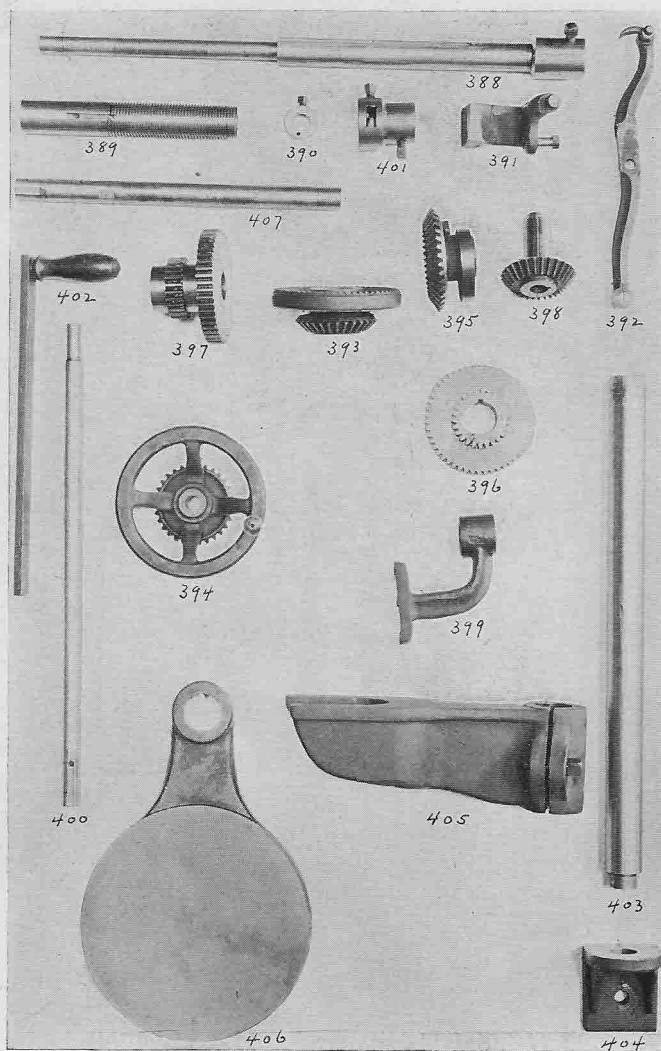
DOUBLE GEARED.

Anticipate	376	Spindle	\$2.60	Antipapal	379	Large Side Gear	\$1.00
Antidote	377	Large Spindle Gear	2.00	Antiphon	380	Small Side Gear	.65
Antimony	378	Small Spindle Gear	.65	Antipode	381	Change Gear Strap	.40

No. 1 RAILROAD TRACK DRILL.

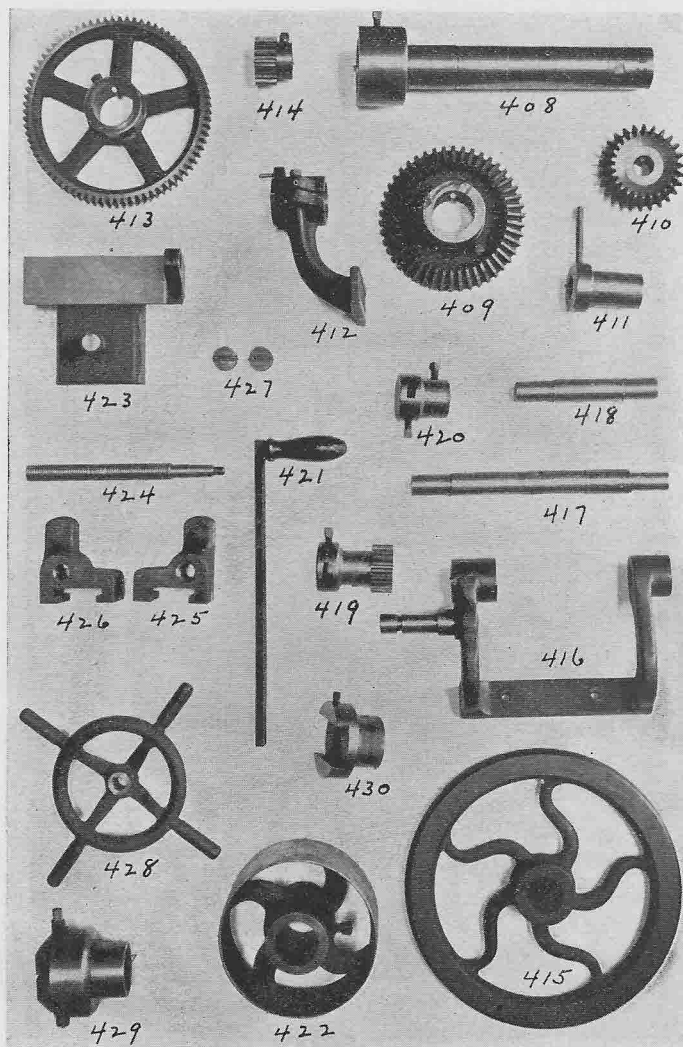
Antipope	382	Shaft	\$1.40	Antitype	385	Feed Screw and Wheel	\$2.60
Antiquate	383	Yoke	4.40	Antler	386	Extension Bar	1.00
Antique	384	Spindle Collar	.15	Anvil	387	Extension Rest	.65

UPRIGHT DRILL, No. 4.



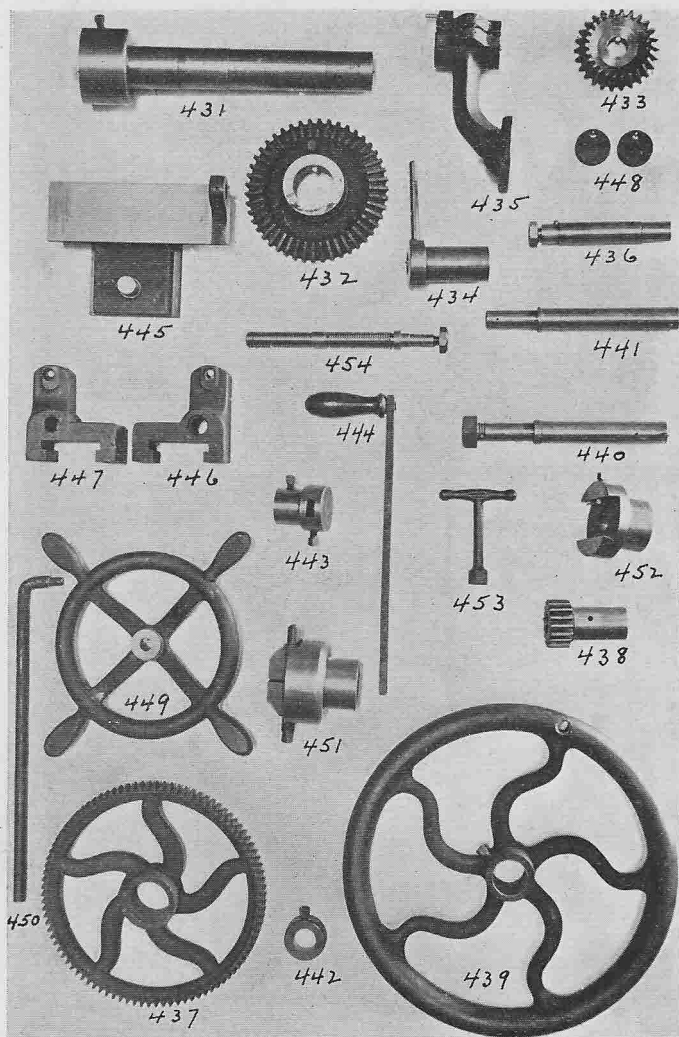
Code Word.	£	Name of Part.	Price.	Code Word.	£	Name of Part.	Price.
Aorist	...	Iron Post, not ill'd	\$5.80	Apiary	397	Large and Small Spindle	
Aorta	...	Frame, not ill'd	5.60			Gears	\$3.40
Apace	...	Balance Wheel, not ill'd	2.35	Apiece	398	Long Hub Gear	1.65
Apart	388	Spindle	3.35	Apish	399	Side Arm	1.00
Apathy	389	Feed Screw	2.00	Apocope	400	Balance Wheel Shaft	1.65
Aperture	390	Spindle Collar	.40	Apogee	401	Crank Head	.65
Apery	391	Feed Bracket	.50	Apograph	402	Crank	.65
Apex	392	Feed Lever	.65	Apologist	403	Table Post	2.00
Aphelion	393	Feed Wheel	1.65	Apologue	404	Post Bracket	.65
Aphorism	394	Hand Wheel and Gear	1.60	Apology	405	Table Rest	1.65
Aphorist	395	Side Gear with Cam	1.35	Apostate	406	Table	1.65
Aphthong	396	Large and Small Change Gears	3.00	Aposteme	407	Side Shaft	1.40

No. 1 BOLT CUTTER AND NUT TAPPER.



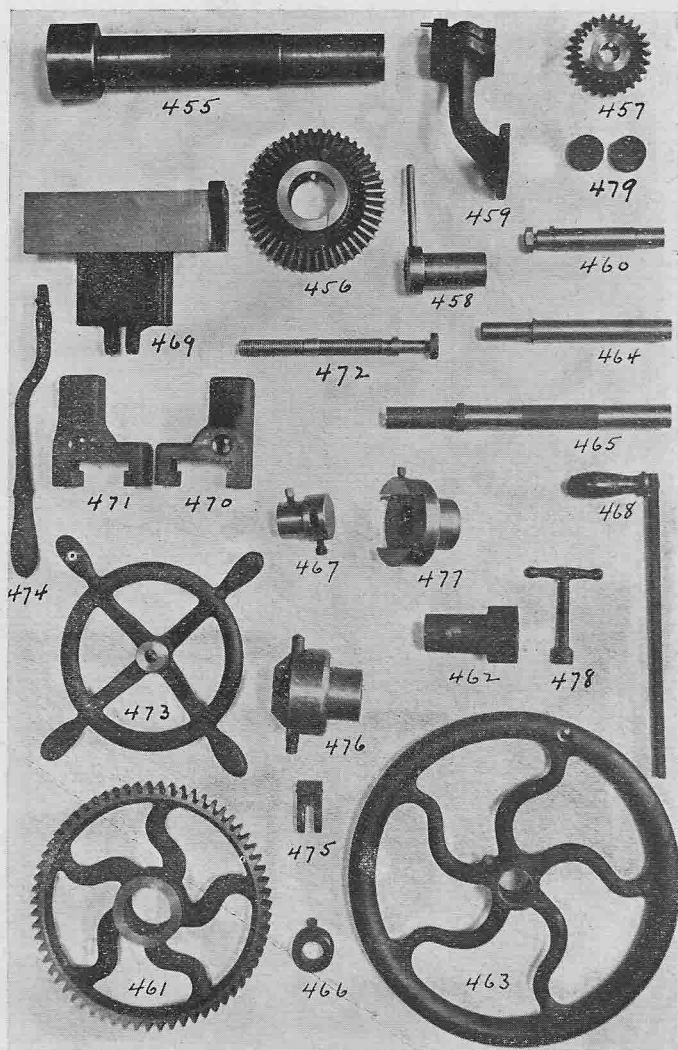
Code Word.	$\frac{1}{2}$	Name of Part.	Price.	Code Word.	$\frac{1}{2}$	Name of Part.	Price.
Babble	...	Body, not ill'd	\$14.00	Baggage	418	Side Stud	\$1.00
Babe	...	Legs, not ill'd, each	2.80	Bagging	419	Crank Head Gear	1.60
Baboon	...	Cone Pulley, not ill'd	3.40	Bagnio	420	Crank Head	.65
Babyish	...	Countershaft, not ill'd	12.60	Bagpipe	421	Crank	.65
Baccate	408	Spindle	5.40	Bail	422	Pulley	2.00
Bachelor	409	Large Bevel Gear	2.00	Bailee	423	Saddle	4.60
Back	410	Small Bevel Gear	1.40	Bailiff	424	Saddle Screw	1.60
Backbite	411	Eccentric	1.40	Bailment	425	Right Jaw	2.40
Backbone	412	Side Arm	1.40	Bairn	426	Left Jaw	2.40
Backdore	413	Large Gear	2.60	Bait	427	Steel Dies, each	1.00
Backward	414	Small Gear	1.00	Baize	428	Saddle Wheel	1.40
Bacon	415	Balance Wheel	2.00	Bake	429	Tap Chuck	8.00
Badge	416	Cone Bracket	2.60	Baking	430	Die Holder	3.40
Baffle	417	Cone Shaft	1.40				

No. 2 BOLT CUTTER AND NUT TAPPER.



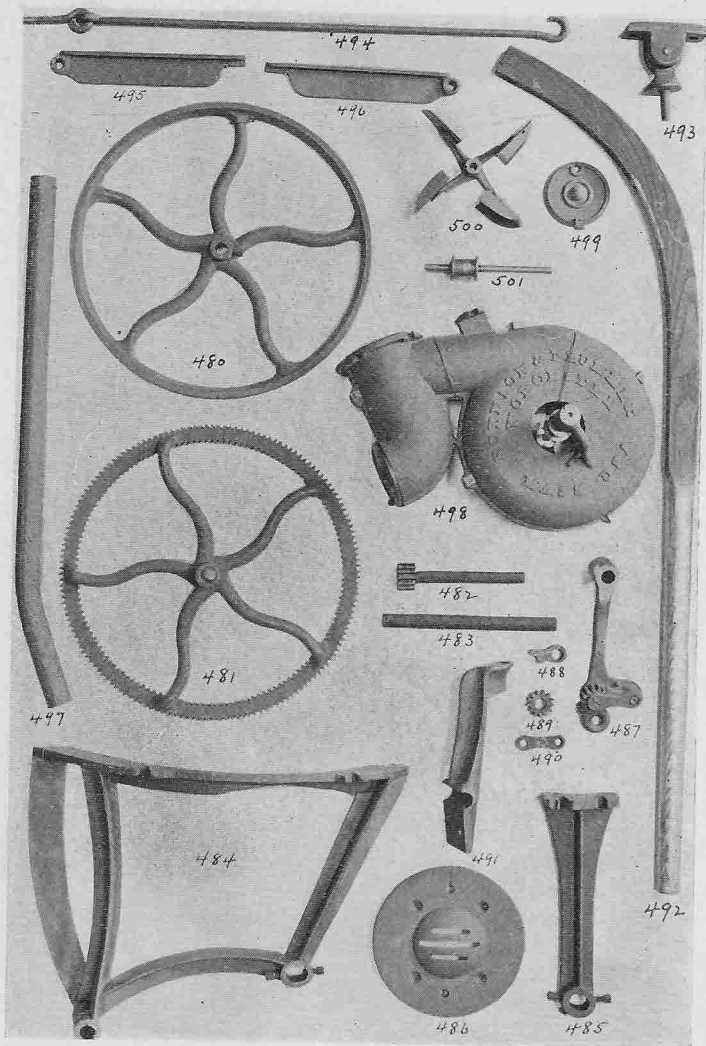
Code Word.	No.	Name of Part.	Price.	Code Word.	No.	Name of Part.	Price.
Balance	...	Body, not ill'd	\$18.00	Balm	441	Cone Stud	\$2.00
Balcony	...	Legs, not ill'd, each	3.40	Balsam	442	Collar	.40
Bald	...	Cone Pulley, not ill'd	4.00	Bamboo	443	Crank Head	.65
Baldness	...	Countershaft, not ill'd	10.00	Band	444	Crank	.65
Baldpate	431	Spindle	5.40	Bandage	445	Saddle	4.60
Baldrick	432	Large Bevel Gear	2.00	Bandana	446	Right Jaw	2.40
Baleful	433	Small Bevel Gear	1.40	Bandbox	447	Left Jaw	2.40
Balize	434	Eccentric	1.40	Bandit	448	Steel Dies, each	1.00
Balk	435	Side Arm	1.40	Bandore	449	Saddle Wheel	1.60
Ballad	436	Side Stud	1.00	Bandrol	450	Starting Bar	.65
Ballast	437	Large Gear	2.60	Bandy	451	Tap Chuck	8.00
Ballet	438	Small Gear	1.00	Bane	452	Die Holder	3.40
Balloon	439	Balance Wheel	2.00	Bang	453	Wrench	.40
Ballotbox	440	Balance Wheel Stud	1.00	Banish	454	Saddle Screw	1.60

No. 3 BOLT CUTTER AND NUT TAPPER.



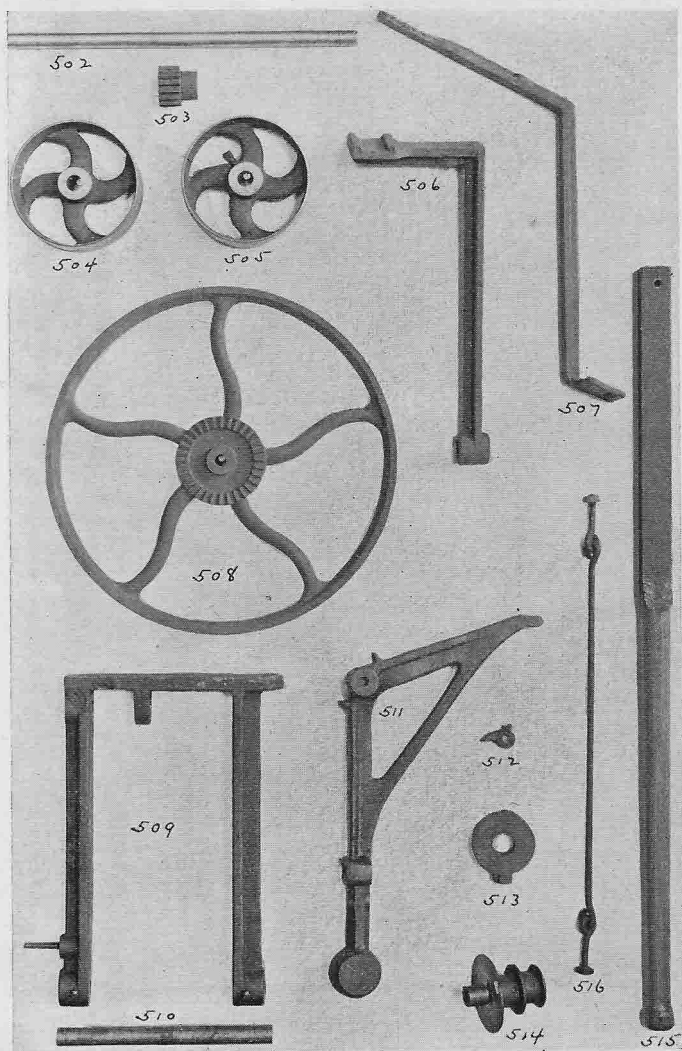
Code Word.	¢	Name of Part.	Price.	Code Word.	¢	Name of Part.	Price.
Bank	...	Body, not ill'd	\$20.00	Baptism	466	Collar	\$0.40
Bankable	...	Legs, not ill'd, each	3.40	Baptize	467	Crank Head	.65
Bankbill	...	Cone Pulley, not ill'd	4.60	Barb	468	Crank	.65
Banknote	...	Countershaft, not ill'd	16.80	Barbel	469	Saddle	4.60
Bankbook	...	Spindle	5.40	Bardic	470	Right Jaw	2.40
Banker	455	Large Bevel Gear	2.00	Bargain	471	Left Jaw	2.40
Banking	456	Small Bevel Gear	1.40	Barge	472	Saddle Screw	1.60
Bankrupt	457	Eccentric	1.40	Barilla	473	Saddle Wheel	1.60
Banner	458	Side Arm	1.40	Barque	474	Starting Lever	1.40
Bannock	459	Side Stud	1.00	Barley	475	Pawl	.40
Banquet	460	Large Gear	3.60	Barnacle	476	Tap Chuck	8.00
Bantam	461	Small Gear	1.00	Baron	477	Die Holder	3.40
Banter	462	Balance Wheel	2.00	Baronet	478	Wrench	.40
Bantting	463	Balance Wheel Stud	1.40	Barouche	479	Steel Dies, each	1.00
Banyan	464	Cone Stud	2.40				

PORTABLE FORGES, Nos. 0-1-13.



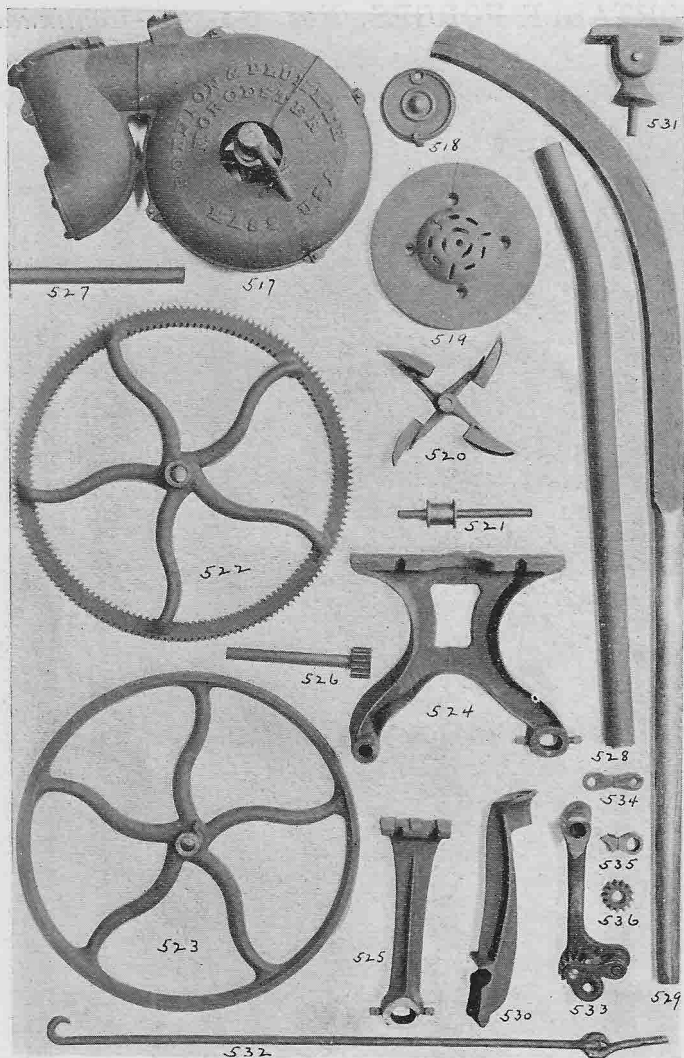
Code Word.	No	Name of Part.	Price.	Code Word.	No	Name of Part.	Price.
Fabian	...	Pan, not ill'd	\$5.00	Factotum	491	Lever Stand	
Fable	...	Sheet Iron Hood, not ill'd	2.00	Faculty	492	Wood Lever	\$0.65
Fabric	480	Large Pulley	1.40	Faddle	493	Swivel	.65
Fabulist	481	Large Gear	2.40	Fade	494	Sweep Rod	.65
Facade	482	Pinion Gear and Shaft	.60	Fagot	495	Side Gate, Right	.65
Face	483	Shaft	.40	Failure	496	Side Gate, Left	.40
Facet	484	Main Hanger	.40	Faint	497	Leg	.40
Facial	485	Small Hanger	3.40	Fair	498	Fan Case and Spider, complete	.60
Facile	486	Tuyere Plate	.65				
Facility	487	Sweep complete	.60				
Facing	488	Pawl	1.00	Faith	499	Ash Cover	5.40
Faction	489	Sweep Gear	.15	Faithful	500	Spider	.15
Factor	490	Strap	.40	Falcate	501	Pulley and Shaft	1.00
			.15				.65

PORTABLE FORGES, Nos. 0-1-13.--Continued.

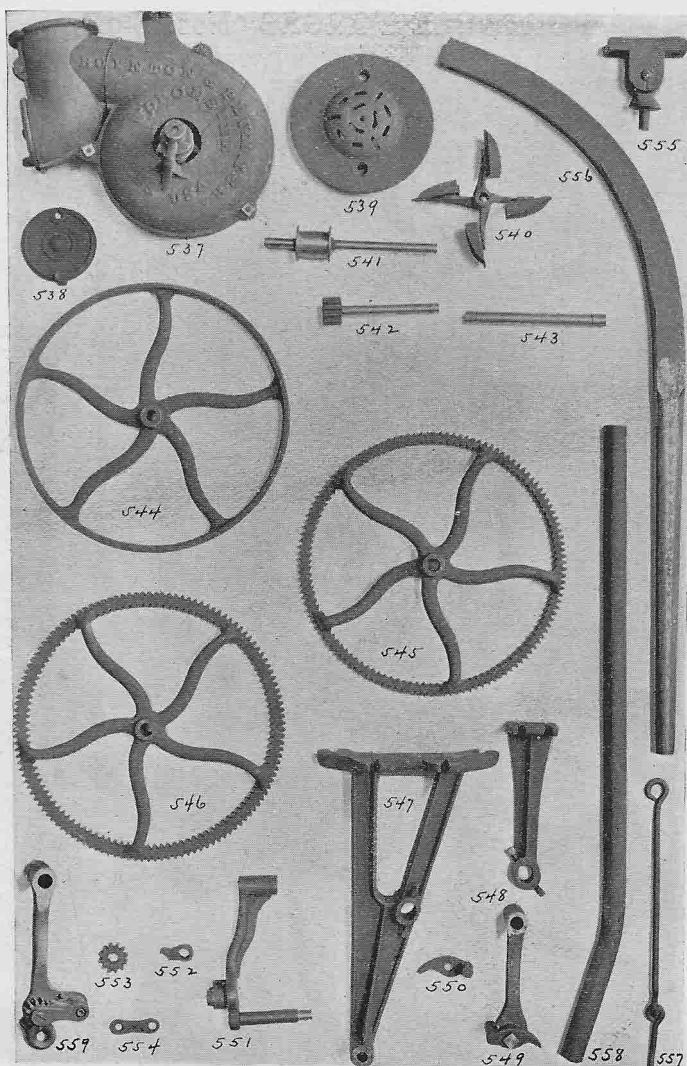


Code Word.	No.	Name of Part.	Price.	Code Word.	No.	Name of Part.	Price.
Falchion	502	Long Shaft	\$0.60	Falter	510	Shaft	\$0.40
Falcon	503	Pinion Gear	.40	Fame	511	Hanger Lever	.80
Fall	504	Loose Pulley	1.00	Familiar	512	Pawl	.15
Fallen	505	Tight Pulley	1.00	Family	513	Clutch	.65
Fallibly	506	Pulley Hanger	.65	Famine	514	Reel	.65
Fallow	507	Shift Lever	.65	Famish	515	Wood Lever	.65
False	508	Large Pulley	2.80	Famous	516	Connecting Rod	.65
Falsetto	509	Hanger	1.00				

PORTABLE FORGES, Nos. 2-3-4.

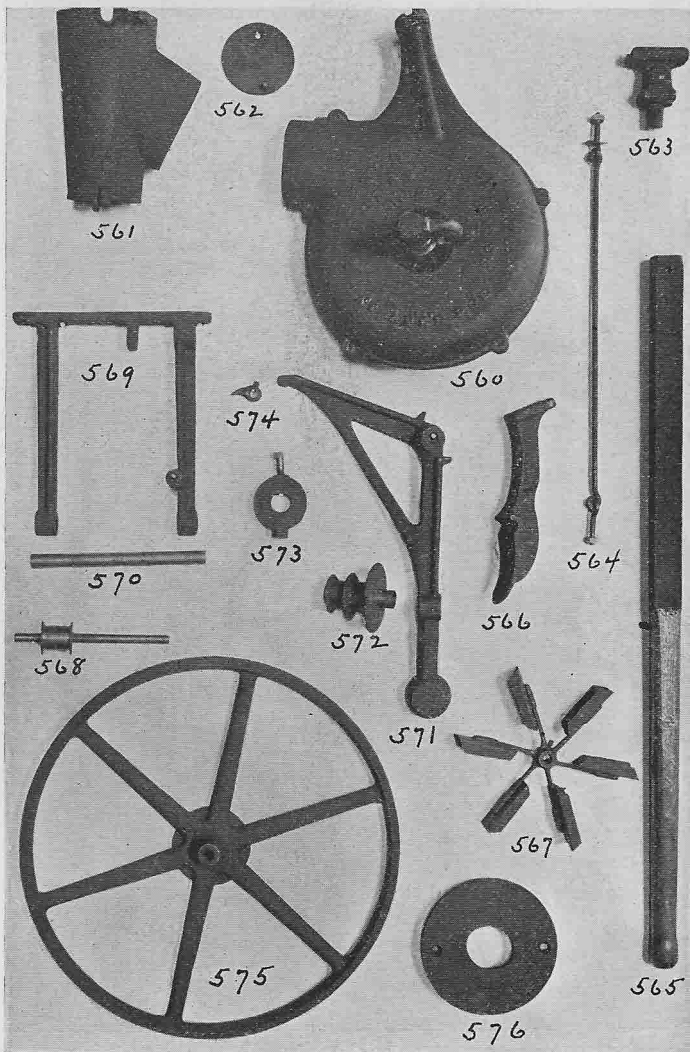


Code Word.	No.	Name of Part.	Price.	Code Word.	No.	Name of Part.	Price.
Fanatic	...	Pan, not ill'd	\$4.60	Farmer	523	Large Pulley	\$1.40
Fanciful	...	Sheet Iron Shield No. 2, not ill'd	.65	Faro	524	Main Hanger	1.40
Fancy	...	Sheet Iron Hood No. 3, not ill'd	2.00	Farago	525	Small Hanger	.65
Fandango	...	Sheet Iron Hood No. 4, not ill'd	2.40	Farrier	526	Pinion Gear and Shaft	.60
Fang	517	Fan Case and Spider, complete	4.00	Farrow	527	Shaft	.40
Fantastic	518	Ash Cover	.15	Fashion	528	Leg	.60
Fantasy	519	Tuyere Plate	.60	Fast	529	Wood Lever	.65
Farce	520	Spider	1.00	Fasten	530	Lever Stand	.65
Farina	521	Pulley and Shaft	.65	Fastness	531	Swivel	.65
Farm	522	Large Gear	1.60	Fate	532	Sweep Rod	.65
				Fathom	533	Sweep, complete	1.00
				Fatigue	534	Strap	.15
				Fatling	535	Pawl	.15
				Fatten	536	Sweep Gear	.40



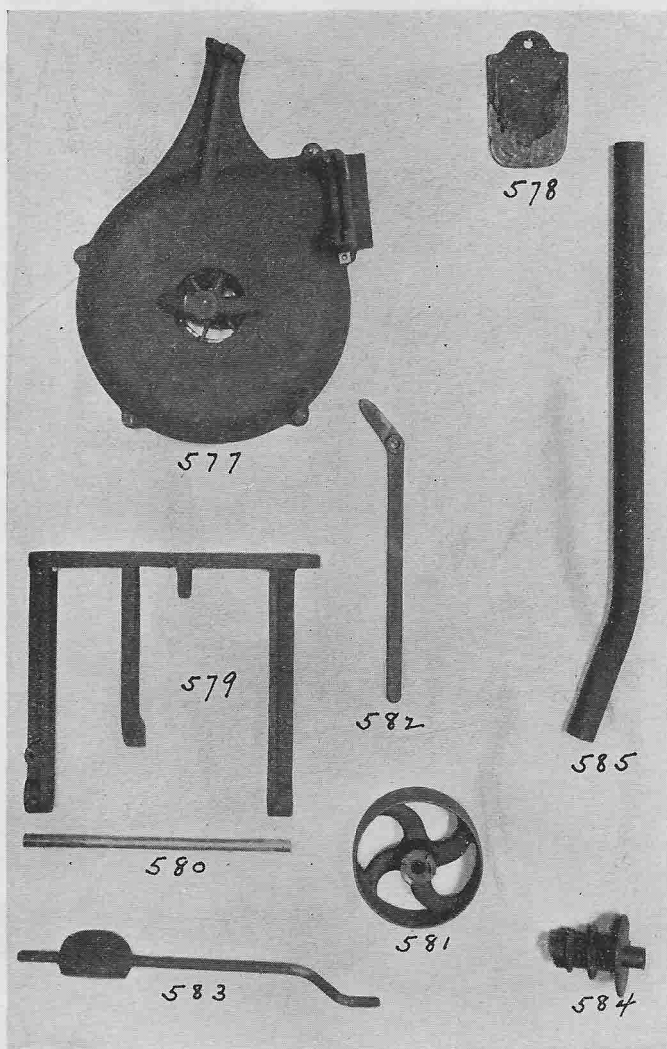
Code Word.	5	Name of Part.	Price.	Code Word.	5	Name of Part.	Price.
Fatty	...	Pan, not ill'd	\$2.40	Feature	544	Large Pulley	\$1.00
Faucet	...	Sheet Iron Shield, " No. 5.	.65	Fecal	545	Large Ratchet Gear	1.00
Faultless	...	Sheet Iron Hood, " No. 6.	1.40	Federal	546	Large Gear	1.00
Faun	...	Sheet Iron Hood, " No. 7.	2.00	Federate	547	Main Hanger	1.00
Favor	...	Sheet Iron Case, " No. 14.	3.00	Feed	548	Small Hanger	.40
Favorite	537	Fan Case and Spider, complete	4.00	Feeler	549	Sweep and Pawl	.80
Fealty	538	Ash-pit Cover	.15	Feeling	550	Pawl	.15
Fearful	539	Tuyere Plate	.40	Felicity	551	Sweep complete, No. 14	1.00
Fearless	540	Spider	.60	Feline	552	Pawl	.15
Feasible	541	Pulley and Shaft	.60	Fellow	553	Sweep Gear	.20
Feast	542	Pinion Gear and Shaft	.40	Felly	554	Strap	.15
Feather	543	Shaft	.20	Fender	555	Swivel	.65
				Ferial	556	Wood Lever	.65
				Ferment	557	Sweep Rod	.40
				Ferret	558	Leg	.40
				Ferry	559	Sweep complete, No. 5	1.00

PORTABLE FORGES, Nos. 8-9.



Code Word.	No.	Name of Part.	Price.	Code Word.	No.	Name of Part.	Price.	
Ferule	...	Pan,	not ill'd	\$5.40	Fete	567	Spider	\$1.00
Fervent	...	Sheet Iron Hood, "	2.00	Fetlock	568	Pulley and Shaft	.65	
Fervid	...	Sheet Iron Shield, "	.65	Fetter	569	Hanger	1.00	
Fervor	565	Fan Case and Spider		Feud	570	Shaft	.20	
		complete	4.00	Fever	571	Hanger Lever	.80	
Fescue	561	Ash Pit	1.00	Fibre	572	Reel	.65	
Festal	562	Ash Pit Cover	.20	Fibril	573	Clutch	.65	
Fester	563	Swivel	.65	Fibrous	574	Pawl	.15	
Festive	564	Lever Rod	.40	Fickle	575	Large Pulley	1.60	
Festoon	565	Wood Lever	.65	Fictil	576	Tuyere Plate	.60	
Fetch	566	Lever Stand	.65					

PORTABLE FORGES, Nos. 8-9—*Continued.*



Code Word.	No.	Name of Part.	Price.	Code Word.	No.	Name of Part.	Price.
Fiction	577	Fan Case and Spider complete	\$4.60	Field	581	Pulley	1.00
Fiddle	578	Blast Gate	.20	Fierce	582	Pulley Lever	.20
Fidget	579	Hanger	1.40	Fieri	583	Tuyere Ball	.40
Fiducial	580	Shaft	.20	Fife	584	Clutch Reel	1.00
				Figment	585	Leg	.60

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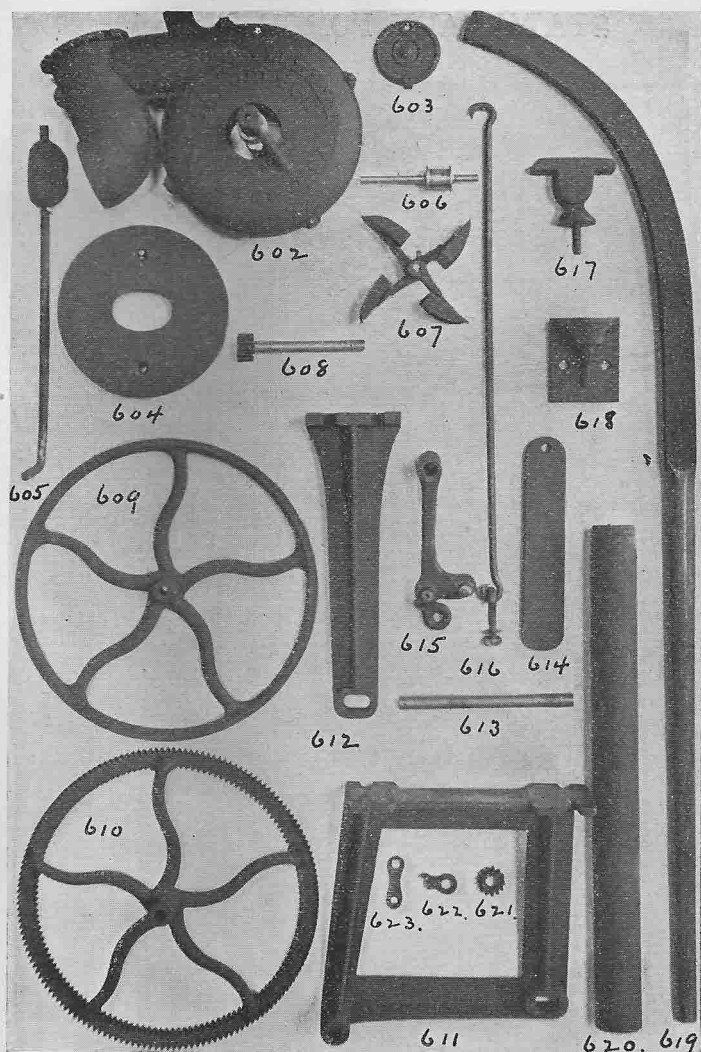
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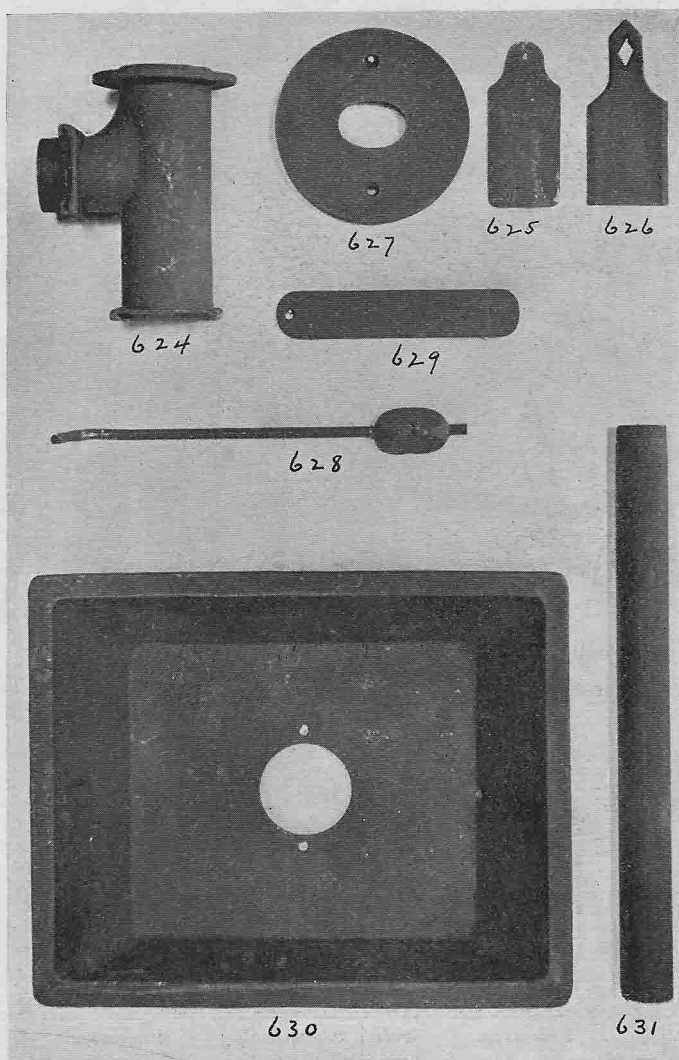
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PORTABLE FORGE No. 15.



Code Word.	602	Name of Part.	Price.	Code Word.	612	Name of Part.	Price.
Fixture	...	Sheet Iron Hood, not ill'd	\$2.40	Flasket	612	Small Hanger	\$1.00
Flagoon	...	Pan	15.00	Flavor	613	Shaft	.20
Flagrant	602	Pan Case and Spider complete	6.00	Flaxen	614	Side Gate	.40
Flail	603	Ash Pit Cover	.20	Flection	615	Sweep	.65
Flake	604	Tuyere Plate	.80	Fledge	616	Sweep Rod	.40
Flambeau	605	Tuyere Ball	.40	Fleece	617	Swivel	.65
Flame	606	Pulley and Shaft	1.00	Fleet	618	Lever Stand	.40
Flamingo	607	Spider	1.00	Fleetness	619	Wood Lever	.65
Flange	608	Pinion Gear and Shaft	.60	Flemish	620	Leg	1.00
Flank	609	Large Pulley	1.40	Flexible	621	Sweep Gear	.15
Flannel	610	Large Gear	2.40	Flexion	622	Pawl	.15
Flapper	611	Main Hanger	2.00	Flexuous	623	Strap	.10

STATIONARY FORGE, No. 16.



Code Word.	£ s	Name of Part.	Price.	Code Word.	£ s	Name of Part.	Price.
Flock	...	Sheet Iron Hood, not ill'd	\$2.40	Flounce	627	Tuyere Plate	\$.80
Flood	...	Pan, "	1.00	Flounder	628	Tuyere Ball	.40
Floret	624	Pipe Connection	1.40	Flow	629	Side Gate	.40
Florin	625	Blast Gate	.20	Flume	630	Fire Pan	3.40
Flotilla	626	Ash Gate	.20	Flutter	631	Leg	1.00

